

# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—43RD YEAR

SYDNEY, SATURDAY, MAY 5, 1956

No. 18

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### An Address.<sup>1</sup>

By E. F. THOMSON,

President, New South Wales Branch of the British Medical Association.

It is a great privilege to stand before you as your President for the ensuing year. To be elected to the presidential chair of this Branch of the Association is a privilege which comes neither through ability nor through special virtue, but through the efflux of time. I wish to take this opportunity of thanking those members of the Branch who, by reelecting me each year, have allowed me to remain on the Council long enough to become the President of the Branch. Nevertheless, this is a privilege which should be honoured by a serious attitude to the office, by a willingness to accept its many responsibilities, by an earnest endeavour to resolve impartially and fairly the many and varied problems that present themselves, and by a preparedness to give and to seek advice according to the need of the occasion. The holder of the presidential office should realize that the office is no sinecure, and that the President should be neither just a figurehead nor a "rubber stamp", but the leader of the Branch for so long

as he retains his office. With these thoughts in mind, it is my intention to serve the Branch to the best of my ability with honesty and, I hope, with courage.

During the year just passed the British Medical Association and this Branch in particular suffered a tragic loss in the death of Sir Archibald Collins, who at the time of his death was President of the Federal Council and Vice-President of this Branch. It was to be expected that Sir Archibald's death would have grave repercussions in the affairs of the Association, for he was a great man, whose wisdom and courage led the Association and this Branch through many troublesome times. His wide experience in matters both medical and political and his knowledge of human nature enabled him to keep a balance between those whose more turbulent minds could lead the Branch into disaster. In paying my sincere tribute to his memory I trust that I shall gain inspiration and courage from his example, so that as your President I may face the difficult problems which will undoubtedly arise throughout the year.

In recent months several letters written under the title of "The British Medical Association and its Members" have been published in THE MEDICAL JOURNAL OF AUSTRALIA. In one of these letters, I think the first, the correspondent in his opening paragraph writes: "On many occasions I have been asked by medical practitioners: 'What has the British Medical Association done for me?'" One has also heard this same question asked by other members.

<sup>1</sup> Read at the annual meeting of the New South Wales Branch of the British Medical Association on March 22, 1956.

The correspondent in this same letter then proceeds to point out what, as he sees it, the Association has done for its members. In the fifth paragraph of the letter he states: "... their 22 members of Council (in New South Wales) devote a large part of their leisure hours voluntarily dealing with negotiations with Governments, State and Commonwealth, insurance companies, the general public and a host of voluntary and statutory organizations, furthering the aims and interests of the medical profession."

This statement is, in fact, true and illustrates that the Council does spend a great deal of its time in conducting the affairs of the Association at a political and financial level. That there must be negotiation at this level is inevitable; but what of the science and practice of medicine?

The standard of general practice in Australia is as high if not higher than that in any other part of the world. Because of the conditions of general practice throughout the Commonwealth and especially in the country areas, it is very necessary to have this high standard of practice, and it is the duty of the Association through its Federal and State Councils to do all it can to see that this standard of practice is maintained. This cannot be achieved by political manoeuvre.

It may be said that modern knowledge of the science and practice of medicine is disseminated by the various colleges, by the Post-Graduate Committee in Medicine and by other scientific bodies; but if the Association neglects its own responsibilities in regard to the acquisition and dissemination of medical knowledge, then the Association will become simply a political machine—without soul, without ideal—and I think it is dangerously close to being just that even now.

Then in truth may the members of the Association ask the question: "What has the Association done for me?"

In preparation for my term as President of the New South Wales Branch I have been studying the Memorandum and Articles of Association and By-laws of the Branch. As a result of this reading it has struck me that, because of the intense political activity of recent years, we—both members of Council and members of the Branch—have forgotten some of the aims of the Association. For example, Clause 3 of the Memorandum sets out the objects for which the Branch was established, and I would read to you some of these objects:

*The promotion, either in conjunction with the British Medical Association or other similar body or bodies or otherwise of medical and the allied sciences, and the maintenance of the honour and the interest of the medical profession by the aid of all or any of the following:—*

- (a) By periodical meetings of the members of the Association and of the medical profession generally in different parts of this colony.
- (b) By the publication of such information as may be thought desirable in the form of a periodical journal which shall be the Journal of the Association.
- (c) By the occasional publication of transactions and other papers.
- (d) By the grant of sums of money out of the funds of the Association for the promotion of the medical and the allied sciences in such manner as may from time to time be determined on.
- (e) And such other lawful things as are incidental or conducive to the attainment of the above objects.

To form a bond of union among the members of the profession and a medium through which their opinions can be easily ascertained or expressed.

To advance the general and social interests of the profession.

To form and maintain a medical library.

I would draw the attention of the members of Council and the members of the Branch to those words which appear and are emphasized by repetition in the first mentioned object of the Branch: "The promotion of the medical and allied sciences."

What has been done to further this object of the Branch? Council arranges monthly scientific meetings in

conjunction with the Special Groups of the Branch. These meetings are usually poorly attended. Monthly clinical meetings are held at various hospitals. These are better attended, but the numbers attending in relationship to the membership of the Branch are small. In recent years an annual scientific meeting has been held in country centres. This has been a valuable contribution and might well be extended. The Special Group hold meetings at regular intervals. These are moderately attended, but usually deal with specialist subjects.

Is it enough that Council should organize such meetings and then not concern itself with their standard or the reasons for the small attendances? If members do not attend the scientific and clinical meetings arranged by Council, the reasons should not be hard to find—the members themselves may not be interested, the subjects may be poorly chosen, the presentation may be poor. Whatever the reason, Council has a duty to endeavour to rectify the fault before it is too late. One hears from older members of the Branch of the meetings of long ago, when both general practitioners and specialists attended in large numbers, and the chosen subjects were of interest to both. Is it possible that, with the formation of Local Associations and Special Groups, the Branch has divided itself against itself, and in so doing negated the object of the Association which reads:

To form a bond of union among members of the profession and a medium through which their opinions can be easily ascertained or expressed.

There are two factors which in my opinion are essential to the maintenance and conduct of a high standard of general practice, and I feel that the Association should be deeply interested in both.

The first is medical education. It might be said that basic medical education is not the concern of the Branch; but the final product of the basic medical education system is most certainly the concern of the Branch; for without good basic medical education there will not be good doctors, and consequently there will not be a high standard of practice. When I speak of good doctors I do not mean brilliant physicians and surgeons, but the general practitioner who has both a sound basic medical knowledge and a thorough understanding of human nature and the problems of family life.

The Branch has, it is true, taken part in conferences on medical education and set up subcommittees to consider the problem; but conferences and discussions at a high level are not enough. Cannot the Branch through its Council give whole-hearted and strongly active support to the claims of the teaching hospitals for adequate finance to provide the facilities so necessary for the carrying out of an efficient teaching programme? At the present time there is no special appropriation of moneys by the Government for the teaching hospitals with which to carry out their teaching programme. The only moneys legally available are the students' fees of £5 5s. per year per student. It would appear at times that there is almost antagonism to the teaching hospitals on the part of some members of the Branch, and indeed on the part of some members of the Council. What magnificent support for the teaching hospitals if this powerful Branch of the Association stood wholeheartedly behind them in their efforts to provide adequate medical training—a support which could be extended to bring pressure to bear on the Government to provide also adequate finance for the maintenance of all hospitals in the State. There can be little progress in hospital care when the already insufficient financial assistance is still further reduced, as it has been this year.

In the *New York Times* of November 28, 1955, the following statement appeared:

The Commonwealth Fund yesterday announced grants totalling 7,150,000 dollars for medical education to be divided between ten university medical schools in the United States.

An unusual feature of the grants is that the money may be used in any way the schools see fit, and they are not to be tied to any particular projects. A second unusual



feature of the gift is that it is made not from current income but from the Commonwealth Funds capital assets and is a recognition that the plight of the medical schools in the United States today calls for quick aid in the form of unrestricted funds. So America faces her responsibilities!

The second factor which I consider important in the maintenance of a high standard of medical practice is a correct attitude to research, both academic and clinical. It is not the function of the Association to engage in research, but one of the objects of the Association is to grant sums of money out of the funds of the Association for the promotion of the medical and allied sciences in such manner as may from time to time be determined on. At the suggestion of our wise and far-seeing Editor of *THE MEDICAL JOURNAL OF AUSTRALIA*, the Council three years ago decided to award an annual Branch Prize of 100 guineas and a bronze medallion for an essay on a scientific subject. The first subject was "The Present-Day Pattern of Infectious Disease" and the second subject "Panhyerectomy: Its Effect on the Individual". In these two years entries were limited to members of the New South Wales Branch, and there were precisely no entries. What glorious apathy! Contrary to current belief, the idea behind this prize was to stimulate the general practitioner to record the results of observation and deduction in his practice. When we think of the contributions of Dr. William Pickles in England and our own Sir Norman Gregg, we know what value can come from accurate recorded observation. This year the subject of the essay is "Infective Hepatitis: Its Incidence and Sequelae". Entries have been extended to include any ordinary member of the British Medical Association, and already there is an indication of an entry from another State.

At a recent conference of the American Foundation in Washington, D.C., a number of leading scientists expressed the view that basic research provided the best hope of solving the problems of medicine. Methods of prevention and treatment wax and wane, but the growth of basic knowledge is lasting. The solution of all the main problems of medicine—cancer, rheumatic conditions, all forms of heart diseases, virus infections—depends upon basic research in the laboratories of biology, chemistry, physics and atomic energy. Rehabilitation, in which the medical profession is taking an increasing interest, will also be advanced by research and investigation.

The Albert Lasker awards of the American Public Health Association are among the most coveted awards in medicine in the United States of America. These awards were instituted ten years ago, not only to honour the recipients and publicize their accomplishments, but also to arouse increased public and professional interest in medical research and public health administration. The achievements of the scientists and administrators so honoured in the past ten years are of themselves a ten-year record of evidence that medical research pays dividends in knowledge and lives. Among the recipients of Lasker Awards have been Dr. John F. Enders, the noted virologist of Harvard University, Dr. Selman Waksman, for his work with streptomycin, Dr. Walsh McDermott and Dr. Carl Munschenheim, New York Hospital, Cornell Medical Centre, for their work with isonicotinic acid hydrazide in the treatment of tuberculosis, Dr. George Papanicolaou, who developed the smear test for cancer, Dr. John Mahoney, who developed the use of penicillin in the treatment of syphilis, Dr. Edward P. Kendall and Dr. Phillip S. Hench, whose endocrine studies led to the ultimate discovery of cortisone, and Dr. Frederick S. May and Dr. H. Trendley Dean, whose efforts led to the widespread fluoridation of water in an attempt to reduce dental caries. Lasker Awards have also gone to groups such as the Health Insurance Plan for Greater New York and the British Ministries of Food and Health.

These significant achievements, along with many others, have led to a growing recognition in the United States of the value of medical research. During this past ten years medical research supported by philanthropy has grown from 15,000,000 dollars in 1945 to 25,000,000 dollars

in 1954. The support of medical research by the United States Federal Government, which was 3,000,000 dollars in 1941, has increased from 15,000,000 dollars in 1945 to 119,000,000 dollars in 1954. This represents approximately 70 cents (6s. 5d. Australian) per head of the total population. In 1954 the Department of Health Education and Welfare requested 17,000,000 dollars for research into diseases of the heart and circulation. This amount was increased by Congress to 18,500,000 dollars. A total of 91,674,000 dollars was appropriated in 1954 for the research programme of the National Institutes of Health.

What of the attitude to medical research in Australia? The sum made available for distribution by the National Health and Medical Research Council in 1955 for the whole of Australia was £140,000, which is 6<sup>1</sup>/<sub>10</sub>d. per head per annum of the 5,200,000 voting population of Australia. An unspecified amount is being spent at the National University, Canberra, and a small amount granted by State Governments; but the whole is appallingly inadequate. In contrast to this the loss on transport in New South Wales in 1955 was £10,000,000.

Many public-spirited and far-sighted individuals and some public companies have made grants for medical research, but there is much more that could be done, especially by those industrial organizations whose fields are allied to medicine.

I have said earlier in this address that the standard of general practice in Australia is as high as that anywhere else in the world, yet we lag far behind in our research activities—not for lack of opportunity, not for lack of material, not for lack of persons capable of carrying out research of high quality, but for lack of adequate research funds. Medical research places in the hands of the general practitioner new and more powerful weapons with which to conquer disease. The general practitioner with his careful and accurate observation can give the research worker much valuable information on the final results of his research. The two should be complementary and not mutually antagonistic; and so I feel that the Association with its powerful influence in the community has a duty to foster medical research in this country.

Nothing is more important in the maintenance of a high standard of medical practice than the intelligent and constant use of medical literature. This fact is well recognized by the Branch Council, which is responsible for the excellent medical library available for the use of members and which is so well used by them. The time has come, however, when the Council must give serious thought to the provision of more adequate accommodation for the library, so that still better library facilities will be available. It has always seemed to me wrong, for instance, that members cannot use the library except between 9 a.m. and 5 p.m. on week days only. Any move to curtail the library facilities must be resisted strongly by members and by Council. I feel sure that, if Council found it necessary to incur additional expense in improving the already excellent library facilities, the members of the Branch would give their whole-hearted support.

I wish to say a word in regard to public relations, of which I believe there are two facets: public relations as between the Association and the public, and public relations as between Council and the members of its Branch. If and when it is necessary to inform the public of the line of thought of the profession, either scientific or political, the public statement should be well considered and well written and presented to the public from the Branch through its Council. If a statement which may also concern the public is to be made by Council to members of the Branch, it may be that Council should make the statement simultaneously to the members and to the public. This would perhaps avoid the horrible spectacle of a confidential letter from Council to members being published in the public Press and being the subject of discussion through the correspondence columns of the public Press.

It becomes more necessary each year for the profession to keep the public well informed on medical matters.

This has been recognized in England and America, where much official use is made of the public Press and of television. The public, after all, is not unintelligent and has a right to be properly informed on what the profession is doing to maintain and improve standards of health. That public relations as between the Council and members of the Branch need to be more adroitly managed was shown quite recently when a letter of reprimand and a letter appealing for funds were posted to members in the same envelope.

Many who have listened to this address will say that the words are those of a specialist who does not understand the problems of general practice. I am certain that the "irate forty" from the eastern suburbs will refer to me as a "non-practising doctor". Nevertheless, this I do believe and understand—that the most important function of the Council is to maintain and protect the high standard of general practice within the Branch, so that the members of the Branch will provide at all times a sound and safe medical service to the public. The members in their turn must do nothing which will in any way jeopardize the standard of their practices or their standing in the community.

If I were to choose a title for this address, I would choose the words "A Challenge". I hope that the thoughts I have expressed will be a challenge to us all:

A challenge to the members of the Branch to support the Branch in every way possible by taking an active and intelligent interest in all Branch activities; by attending meetings and taking part in the discussions, whether the meeting be medical or political; by voicing constructive criticism at all times through the proper channels; by remembering that this is a Branch of the British Medical Association, whose members include general practitioners, specialists and salaried medical officers, all of whom should work together for the common good.

A challenge to members of Council to lead the Branch wisely and well without thought of political gain or personal triumph; to face adverse criticism with constructive thought and be prepared to correct faults in the service to members where these faults exist.

A challenge to your incoming President to serve the Branch with honesty of purpose, with vision and with courage.

If these challenges are met by all those concerned, then at the end of this British Medical Association year the question asked by members should not be "What has the British Medical Association done for me?" but "What have I done for the British Medical Association?"

#### A RADIOIODINE UPTAKE TEST AND ITS APPLICATION IN CLINICAL DIAGNOSIS.

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It is over fifteen years since tracer amounts of radioiodine were first used in the investigation of human thyroid disease (Hamilton and Soley, 1940; Herz, 1941), and the need for the everyday use of this isotope in the practical management, especially the diagnosis, of thyroid patients is now widely accepted. Indeed, it is hardly an

overstatement to say that efficient thyroid work, by present-day standards, is impossible without its help.

The object of this paper is to describe our experiences with a simple test of iodine uptake in thyroid patients. It is based on the rate and amount of  $I^{131}$  accumulating in the thyroid gland within the first hour of injecting a tracer dose intravenously. Thyroid uptake is measured by expressing the count of radioactivity over the thyroid (neck count) as a function of the general body background (thigh count), namely, as the neck/thigh ratio (N/T). Similar but more elaborate techniques have been reported by Pochin in 1950 (thyroid-iodide clearance rate) and by Foote and MacLagan in 1951 (neck/thigh clearance rate). Indeed, Pochin stresses the possible advantages for diagnostic purposes of a simple measurement of the neck/thigh ratio, and in clinical work the method described here has proved both very convenient and reliable.

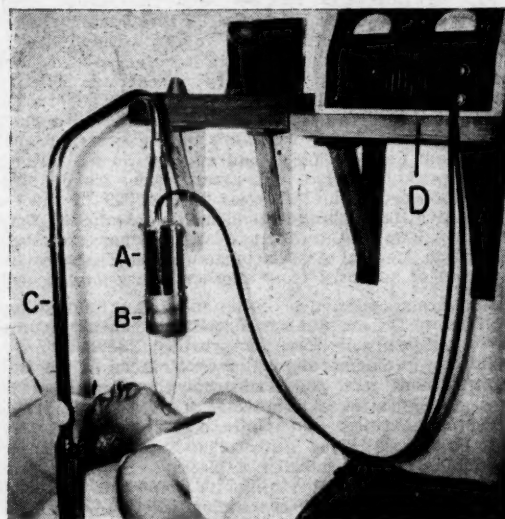


FIGURE 1.

General disposition of apparatus. A, scintillometer head; B, detachable leaden shield; C, adjustable carrying arm; D, ratemeter.

#### Material and Methods.<sup>1</sup>

The material analysed here comprises 135 consecutive  $I^{131}$  uptake tests carried out on 121 patients, all of whom were referred as presenting thyroid problems. No test done during the period involved has been omitted, but not all patients seen were submitted to the test.

#### Clinical Methods.

As a first step a detailed history was taken and the patient was fully examined by one of us. She was then interviewed independently by a second observer, so that all the chief points in the history and physical examination were doubly checked. The results of X-ray screening examination of the heart and lungs and of the trachea and oesophagus (by a barium bolus) in patients with prominent local symptoms or possible intrathoracic extension of the goitre, the basal metabolic rate, electrocardiographic tracings, the blood picture, and the histology of any excised thyroid tissue were all taken into account in arriving at a final diagnosis. For this purpose we have met weekly and discussed all patients currently undergoing assessment or treatment. When the diagnosis was doubtful the patient returned monthly or two-monthly for review until the nature of her "thyroid" disorder became clear. In the final

<sup>1</sup>In receipt of a grant-in-aid for radioiodine studies from Sir Edward Hallstrom made through the New South Wales State Cancer Council.

<sup>2</sup>We are grateful to Dr. Peter Blaxland and Mrs. W. Ireland for valuable help.



analysis the clinical evidence and the patient's progress have been decisive in arriving at her classification.

The  $I^{131}$  uptake tests performed during this study have, however, not been allowed to influence the classification of any patient. This was necessary because we wished first of all to learn the range of values obtained by our technique in patients of various types and thus what reliance we could subsequently place on a particular figure.

Careful note was taken of previous surgical or medical treatment for thyroid disease and of current or recent medication or radiological examinations involving the use of iodine-containing radioopaque material for non-thyroid diseases. The patients remained on their usual diet up to the time of the test, no attempt being made to limit its iodine content.

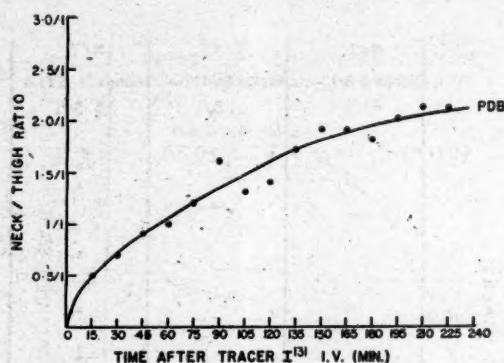


FIGURE II.  
Increase in N/T with time after administration of tracer dose.

#### Apparatus.

The apparatus used has been of the simplest kind, consisting of a scintillation counter and ratemeter (Panax model 50A). The disposition of the counter over the neck is shown in Figure I. The cylindrical counter (A) contains a thallium-activated sodium iodide crystal of one inch in diameter and five-eighths of an inch in thickness, housed in a hollow cylinder of lead three inches long with walls three-eighths of an inch thick, and a single photomultiplier tube (E.M.I. type 6062), which is run at 1750 volts.

In making neck counts further light shielding is provided for the crystal by a detachable leaden cylinder (B) with conical lumen, to which is fixed a light wire loop giving a skin-crystal distance of 30 centimetres when the tip of the loop is in contact with the neck. The detachable shield has a height of three inches and an external diameter of three inches, but is hollowed out as a cone, expanding towards the loop, the aperture in contact with the head being 1.2 inches in diameter and that at the loop end 2.7 inches.

The counting head is conveniently suspended from a mobile carrying arm (C) of adjustable height.

#### Technique of Test.

Sterile ampoules containing the test dose of  $I^{131}$  at an approximate strength of 10 microcuries have been supplied by the Commonwealth X-Ray and Radium Laboratory in Melbourne. Since the only index used has been the ratio of the neck count to the thigh count, the absolute amount of tracer used in individual tests has not been measured. In each case the dose has been given by intravenous injection in a laboratory separated by several hundred feet from that in which the counts were recorded.

The ratemeter was switched on at a voltage of 1750 for a warming-up period of greater than 15 minutes before the readings were due. Readings of the radiation background

were taken with and without the detachable shield on the scintillometer and were deducted from the subsequent neck and thigh readings respectively before calculating N/T.

The patient was then brought into the laboratory and placed in position on the couch, the neck being comfortably extended with a pillow under the shoulders and the lower limbs separated by eight to ten inches to minimize radiation effect from the opposite side during the thigh count. At one hour precisely after the administration of the test dose a count was taken over the neck with the open conical shield and loop attached to the scintillation head as in Figure I, the count being the average of three readings of the ratemeter dial. The shield was then quickly removed and the scintillometer was swung down into contact with the lower one-third of the right thigh, the thigh count being immediately taken as the average of three readings of the ratemeter.

As is well known,  $I^{131}$  is still accumulating in the thyroid gland one hour after its intravenous injection, whereas the thigh count is decreasing. Thus there is a

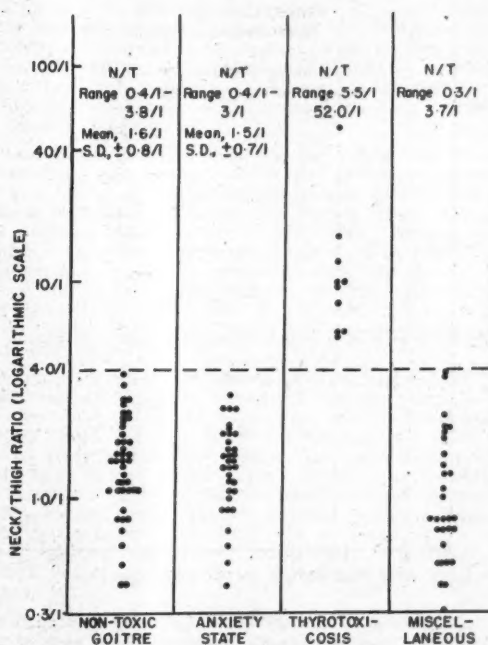


FIGURE III.  
Distribution of neck/thyroid ratio in various clinical groups. The interrupted horizontal line indicates the approximate upper limit of euthyroidism by our technique. The apparent spread in values is limited by the logarithmic scale. The clear differentiation between patients with anxiety states and thyrotoxicosis is shown.

progressive increase in the N/T ratio and, used as a diagnostic test, the value may be misleading if the readings are incorrectly timed. The importance of taking readings at a constant interval after the test dose is illustrated by reference to the data in Figure II, obtained from a control subject.

Similarly, for one-hour testing it is necessary that the tracer dose be given intravenously, not orally, to avoid inconsistency due to variation in absorption rates. This has the advantage also that the patient need not fast before the test.

#### Results.

The patients were classified into the following clinical groups:

1. Non-toxic goitres. In this group were 43 patients, with all types of non-toxic goitres, including adolescent and established, diffuse and nodular.

2. Anxiety states. In this group were 32 patients, who had undergone 33 tests. This diagnosis was reserved for those whose psychoneurotic symptoms were the real disability bringing them to the doctor. Eighteen had goitres, ten small, eight of medium size, but these were considered to be incidental. Had it not been for the goitre, many of the patients might have been referred to a psychiatrist direct.

3. Definite thyrotoxicosis. In this group were ten patients. In three the goitre was diffuse, in seven it was nodular; in five well-marked eye signs were present.

It is admitted that no hard and fast line can be drawn between patients in groups 1, 2 and 3. Nevertheless it has been thought preferable to avoid borderline subgroups. Thus some slightly or intermittently toxic goitres may be included in groups 1 and 2.

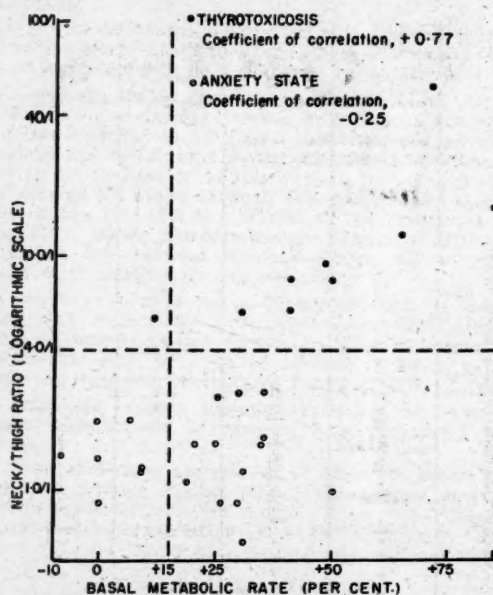


FIGURE IV.

Correlation between basal metabolic rate and N/T (plotted logarithmically) in thyrotoxicosis and anxiety states. The interrupted vertical and horizontal lines indicate the upper limits of euthyroid values for the basal metabolic rate and N/T respectively. The positive correlation between the basal metabolic rate and N/T in thyrotoxicosis is significant at the 2% level. The corresponding coefficient in anxiety states is not significant.

4. Miscellaneous. In this group were 27 patients, who had undergone 30 tests, the results of which are discussed below.

The results obtained in the four groups are summarized in Figure III. In the non-toxic goitre group the range of values for N/T was from 0.4/1 to 3.8/1, with a mean of 1.6/1 and a standard deviation of  $\pm 0.8/1$ . In the anxiety states group N/T ranged from 0.4/1 to 3.0/1, with a mean of 1.5/1 and a standard deviation of  $\pm 0.7/1$ .

In patients with definite thyrotoxicosis, N/T ranged from 5.5/1 to 52/1; this shows a clear separation from the values in the anxiety state and non-toxic goitre groups. The correlation between N/T and basal metabolic rate in thyrotoxicosis and anxiety states is shown in Figure IV. If N/T is plotted on a logarithmic scale this correlation is seen to be close in the former group, as shown by Foote, Mackenzie and MacLagan (1952); but all correlation is

lacking in the latter group, in which falsely high readings for the basal metabolic rate were found in 13 of 20 patients tested.

It appears from groups 1, 2 and 3 that we may take 4/1 as the approximate upper limit for N/T in euthyroidism. In the miscellaneous group, values of less than 4/1 were found in 30 tests on patients with ophthalmic forms of Graves's disease (4), with thyrotoxicosis in clinical remission (4), with hypothyroidism (5), after thyroidectomy for non-toxic goitre (7), with cardiac conditions without thyroid disease (4), with Hashimoto's struma (2), with PAS goitre (1), and with simple goitre treated up to one month before with  $I^{131}$  or thyroid extract (3). Because of the small number of patients in each category and other factors, few conclusions can be reached regarding these miscellaneous patients.

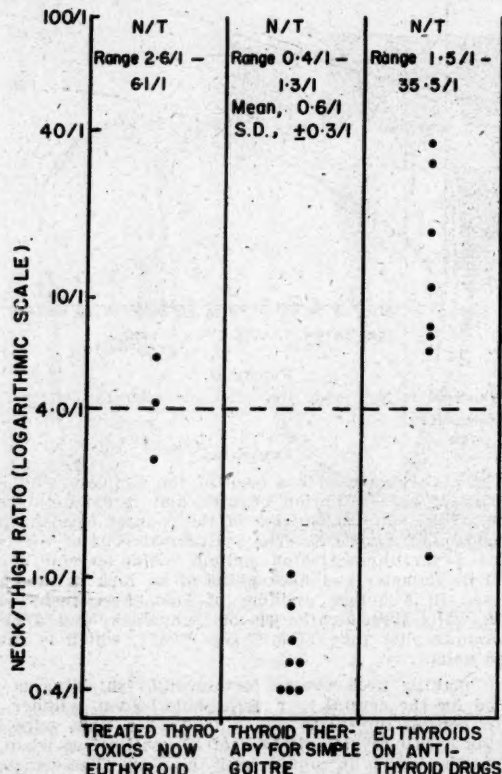


FIGURE V.

The effect of various methods of treatment on N/T.

It may, however, be noted that in none of the patients with ophthalmic Graves's disease was there any clinical evidence of hyperthyroidism. In the hypothyroid subjects the range was from 0.3/1 to 0.7/1, which is very low, but three were already receiving thyroid therapy at the time of the test. Because of recent  $I^{131}$  or thyroid therapy three tests on patients with simple goitre were included here rather than in the non-toxic goitre group.

The uptake of  $I^{131}$  after various methods of treatment is illustrated in Figure V.

**Treated Thyrotoxics.**—The three treated thyrotoxic patients were all euthyroid clinically. Both of those with an N/T greater than 4/1 had received  $I^{131}$  therapy for thyrotoxicosis just over four months previously. The third had undergone thyroidectomy seven years previously. The occasional presence of a high iodine uptake after  $I^{131}$  therapy is well known. Larsson (1955), for example, in a detailed study of patients so treated observed that some



had a remarkably high  $I^{131}$  uptake afterwards, though there was no clinical suspicion of hyperthyroidism.

**Euthyroid Subjects Treated with Thyroid Extract.**—The inhibitory effect on thyroid function of exogenous thyroid hormone has been fully described by Greer in 1951 and subsequently, and this effect has been well demonstrated by the present simple technique in a group of six patients with non-toxic diffuse goitres who were treated with thyroid extract in doses of one to three grains daily for periods of from five to sixteen weeks. The suppressive effect of thyroid hormone on  $I^{131}$  uptake has been used as a diagnostic test in the differentiation of simple and toxic goitres, since in the latter, uptake is not effectively suppressed, even with full therapeutic doses of the hormone (Greer and Smith, 1954; Werner and Spooner, 1955).

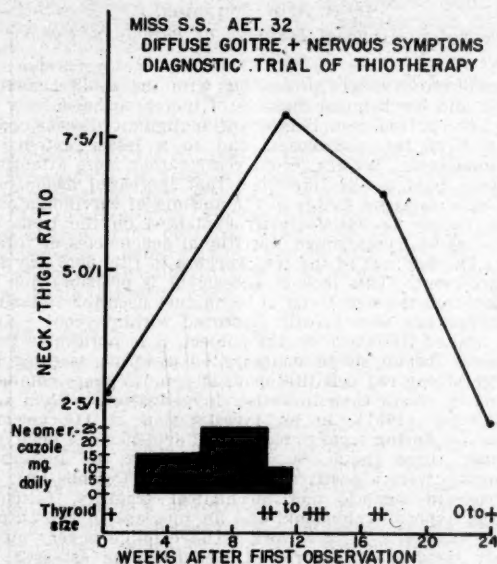


FIGURE VI.

Thyroid enlargement and increase in N/T with "Neomercazole" therapy in a euthyroid subject. N/T reverted to normal some ten weeks after cessation of therapy. Increasing degrees of thyroid enlargement are graded 0, +, ++, +++ and ++++ on arbitrary criteria.

**Previously Euthyroid Patients under Treatment with an Antithyroid Agent.**—Six previously euthyroid patients (eight tests) were under treatment with an antithyroid agent. Thiouracil-induced hyperplasia of the thyroid has long been known (Vanderlaan and Vanderlaan, 1947) to increase  $I^{131}$  uptake in the experimental animal; and though the phenomenon has not been adequately studied in man, the effect is generally assumed to be the same.

The data in Figure VI illustrate this effect in a patient who first presented on March 31, 1955, with a small diffuse goitre and rather severe nervous symptoms. The result of an estimation of the basal metabolic rate previously arranged by her referring doctor was +37% (on March 7, 1955). At the original assessment certain of her symptoms, including weight loss, had suggested the possible presence of thyrotoxicosis, and she was given a course of "Neomercazole", 10 to 25 milligrammes daily for nine weeks, as a therapeutic and diagnostic trial. However, continued observation convinced us that her symptoms were purely psychoneurotic; "Neomercazole" gave her no benefit, its only effect being to increase the size of her goitre perceptibly. As Figure VI shows, the  $I^{131}$  uptake trebled during the phase of thyroid hyperplasia and reverted to normal with cessation of "Neomercazole" therapy and subsequent regression of her goitre.

#### Discussion.

The functional cycle in the thyroid follicle involves successively iodine uptake, hormone synthesis (organic binding) and hormone secretion, the three steps comprising the so-called "turnover of iodine". About 85% of the  $I^{131}$  present in the thyroid at any given moment is organically bound, and this constant ratio is achieved within some fifteen minutes after the administration of a test dose (Chaikoff *et alii*, 1949; Rollinson *et alii*, 1955). Immediately some binding has taken place, release of  $I^{131}$ -labelled hormone from the gland will start. In normal subjects this is rather a slow process, two or more days elapsing before measurable amounts of radiothyroxine are found in the plasma (Myant and Pochin, 1949). But in thyrotoxic subjects its presence can be demonstrated in three to seven hours. Turnover of iodine is both greater in extent and more rapidly occurring in thyrotoxicosis than in health.

Turnover of iodine is the essence of thyroid function, and the N/T ratio is a function of the first step in the process. The simplicity of measuring N/T, its flexibility, and its value in diagnosis have been fully demonstrated in these studies. However, used as a sole index of thyroid activity, it is subject to fallacy, because the rate and extent of iodine uptake and thyroid hormone secretion do not always run parallel. For example, thyroid-blocking agents obviously cause a dissociation in these two aspects of thyroid function.

More direct tests to measure the amount of hormone secreted include estimations of the serum protein-bound  $I^{131}$  fraction after butanol extraction and reextraction with sodium carbonate (Chaikoff and Taurog, 1949; Schultz *et alii*, 1952 and 1954; Ingbar *et alii*, 1954). Serum protein-bound  $I^{131}$  has been found to be increased in hyperthyroid patients and is a rather sensitive diagnostic test if determined after forty-eight hours (Clarke, Sherriff and Winikoff, 1955). The ratio of protein-bound  $I^{131}$  to total  $I^{131}$  in plasma (conversion-ratio) has also been widely used as a diagnostic index.

When they were introduced it was hoped that these indices would provide a convenient substitute for the complicated and laborious estimation of the biochemical protein-bound iodine. In these respects the tests have proved disappointing, and they are also open to the fallacy that "false hyperthyroid" (high) results may be obtained in euthyroid patients (Silver, Yohalem and Newburger, 1955). Indeed, Riggs (1952) concludes that methods which measure the accumulation of  $I^{131}$  in the gland have a much more simple and direct quantitative relationship to thyroid secretion than those which measure release of organic  $I^{131}$ .

It cannot be overemphasized that no laboratory test will ever replace painstaking clinical assessment. In this connexion one need only cite a patient reported by Brenner, Black and Gaddie (1954). He did not appear clinically to be thyrotoxic, but his basal metabolic rate and serum protein-bound iodine were persistently raised, and his estimated daily secretion of thyroxine was some six times normal. It thus seems that thyrotoxicosis cannot be defined simply in terms of hormone output; the response of the target organs and tissue cells must be taken into account; and this may vary greatly, just as in alcohol intoxication.

Nevertheless these special tests have an essential place in clinical work, in that they speed up the process of sorting patients and render it more accurate by giving the clinician a jolt when he has not read the clinical evidence with sufficient care. The chief application of the present  $I^{131}$  uptake test is in the rapid separation of patients with thyrotoxicosis and anxiety states. In a thyroid clinic this is the outstanding diagnostic problem, for patients with anxiety states comprise up to 40% of all patients attending. The  $I^{131}$  uptake by the thyroid is not affected by emotion, and low readings are regularly obtained in contrast with the frequency of falsely high basal metabolic rate results. Thyroidectomy in such patients gives bad results. Thus the need for a reliable

differentiating test has been very great, and on this account  $I^{131}$  techniques have already come into everyday use and have won an established place in diagnostic work.

Among the other applications noted here is the use of the neck/thigh ratio in cardiac patients when it is essential to exclude any possibility of thyrotoxicosis and when dyspnoea would vitiate estimations of the basal metabolic rate.

Finally, it may be emphasized that the result of the reading must always be interpreted with care. For example, it is obvious from the data in Figure VI that there is a constant need for close inquiry concerning all forms of previous therapy.

### Summary.

A technique for measuring thyroid activity by its uptake of  $I^{131}$  (neck-thigh ratio) is described. It involves the use of  $I^{131}$  in 10-microcurie doses and a very simple counting apparatus. Its usefulness as a diagnostic test rests chiefly on the clear differentiation between patients with anxiety states and those with definite thyrotoxicosis. But the technique has numerous other applications which are illustrated in the series of 135 tests reported. If iodine intake has been normal, a low value for the neck/thigh ratio may be accepted as positive evidence against the presence of thyrotoxicosis. But high readings, within the thyrotoxic range, have been found in euthyroid patients under thiouracil therapy, and four months or more after effective  $I^{131}$  treatment for thyrotoxicosis.

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### RED CELL LIFE SPAN IN CARCINOMATOSIS.<sup>1</sup>

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HÆMOLYTIC ANÆMIA presenting with the usual hæmatological and biochemical findings of increased hæmolysis is a well-recognized complication of malignant disease, particularly of the reticulosos, and to a lesser extent of carcinomatosis. Within recent years rather more attention has been paid to the likelihood that increased hæmolysis may be a causative factor in the anæmia of carcinomatosis which cannot be satisfactorily explained on the basis of blood loss by hæmorrhage, nutritional deficiencies or infection. The findings of the few workers in this field are not in agreement. This lack of agreement is probably due to the fact that the sensitivity of techniques used for assessing hæmolysis has been greatly improved within recent years. In a limited literature on the subject, it is noticeable that increased hæmolysis in malignant disease, as assessed by studies of the red cell life span, is a much more common finding in recent than in earlier investigations. Shen and Homburger (1951), in an investigation of 116 anæmic patients suffering from cancer, found evidence of hæmolysis in only three instances. Their criteria for increased hæmolysis were a positive response to the Coombs test, an increase in osmotic and mechanical fragility, reticulocytosis, hyperbilirubinæmia and an increase in the output of bile pigments. Other workers have found a very much higher incidence of increased hæmolysis as assessed by studies of the red cell life span. Sheets, Hamilton, De Gown and Janney (1954), using the Ashby technique, found that normal blood transfused to five patients suffering respectively from cancer of the cervix, breast and rectum and from multiple myeloma, was eliminated unusually rapidly. Sheets and co-workers have also shown that there was an increased rate of hæmolysis within seven to ten days of the commencement of treatment with X rays or radium. Hyman (1954), using the Ashby technique in a study of 13 cases of malignant disease, found evidence of shortened red cell life span in all but one. Ten of these patients were suffering from cancer.

At this stage it would make the problem easier to understand if I briefly discussed techniques in current use for the estimation of the red cell life span.

#### The Differential Agglutination Technique of Ashby.

Ashby's differential agglutination technique consists of the transfusion, into the circulation of the subject under investigation, of red cells which are compatible but of a different serological group from that of the recipient. Blood is then taken from the recipient after transfusion and suspended in a potent agglutinating serum which is active against the recipient's cells. The unagglutinated cells of the donor are then counted in the samples of blood collected throughout the period of investigation. Each count is usually expressed as a percentage of the first sample obtained after transfusion. In the normal subject there is a linear relationship between percentage survival and time.

<sup>1</sup> Read at a meeting of the Section of Pathology, Bacteriology, Biochemistry and Forensic Meeting, Australasian Medical Congress (British Medical Association), Ninth Session, Sydney, August 20 to 27, 1955.



Normal cells in the normal subject have a life span of approximately 120 days.

The most important factors in the success of this method are the potency of the agglutinating serum and patience to count a large number of red cells.

This method has the obvious disadvantage that it is the life span of the donor's cells which is measured, and not that of the patient's own cells.

#### Techniques in which Radioactive Isotopes are Used.

Techniques in which radioactive isotopes are used have the great advantage that the patient's own cells can be studied; radioactive isotopes can be incorporated into the red cell in various ways.

##### <sup>59</sup>Ni.

Glycine is used in the formation of protoporphyrin, from which haemoglobin is derived. It is labelled with <sup>59</sup>Ni, and then injected, and the life span of the red cell is determined by analysis of isotope concentration and time curve for haemin. This method is not suitable for routine use.

##### <sup>59</sup>Fe. <sup>55</sup>Fe.

Radioactive iron is injected, and as soon as the uptake curve reaches its plateau, large intravenous injections of non-radioactive iron are given; further doses are given during the treatment to prevent the reutilization of radioactive iron from breaking down cells in newly formed haemoglobin. This technique can be used only in subjects in whom reutilization of iron is minimal, and it does not lend itself to routine use.

##### <sup>51</sup>Cr.

The use of <sup>51</sup>Cr to determine the red cell life span has the advantage of simplicity and a high order of accuracy, and readily lends itself to routine use.

Gray and Sterling (1955) have shown that human red cells contain about 20 microgrammes of chromium per millilitre. Using the radioactive isotope <sup>51</sup>Cr, they have found that red cells mixed with sodium chromate rapidly take up chromium, which apparently becomes bound to the globin portion of haemoglobin. The range of the amounts of chromium which can be used without impairing the viability of the cells exposed to it is quite wide. After death of the red cell the chromium is not reutilized by other cells. It has been shown (Mollison and Veall, 1955) that when chromium is suddenly released from the red cells, about two-thirds is excreted very rapidly and the remainder more slowly. During excretion the liver is the main site of temporary storage.

Apart from its simplicity, the advantage of this method is that red cells of one person can after being labelled be transfused to another recipient or given back to the donor himself.

Briefly the technique (Mollison and Veall, 1955) is as follows:

Approximately 20 millilitres of blood are collected with a heparinized syringe from the patient (or donor). The blood is then delivered into three to five millilitres of acid-citrate-dextrose solution. After centrifugation the supernatant plasma is removed. To the deposit of red cells is added the radioactive sodium chromate solution, usually in a dose of 25 to 50 microcuries. After standing at room temperature for twenty-five to forty-five minutes the cells are washed twice with saline plasma and resuspended to approximately their original volume. At the end of this period uptake is complete, and the suspension of <sup>51</sup>Cr labelled red cells is injected. If a red cell volume determination is required, a measured volume is injected with a calibrated syringe. Ten minutes after injection, when mixing in the patient's circulation is complete, a 10-millilitre sample of blood is collected. Subsequent samples are collected at daily intervals for three days, and then usually at weekly intervals throughout the course of investigation. Blood samples are haemolysed with saponin, and the radioactivity is estimated in a  $\gamma$ -ray scintillation counter.

If the amount of <sup>51</sup>Cr remaining in the circulation expressed as counts per minute per millilitre of blood is

plotted against time in days, a curvilinear slope is obtained (Figure 1). It is found that when <sup>51</sup>Cr labelled cells are injected into the circulation, <sup>51</sup>Cr is lost more rapidly than would be expected from the known survival time of red cells; it is now established that <sup>51</sup>Cr is eluted from the red cells. Elution is most rapid in the first twenty-four hours.

When survival showed a linear relationship against time, a line was drawn through the points on the graph and the intercept with the time axis at 0% survival was taken as the cell life span; when the curve was exponential, the mean cell life was taken as the time when 37% of the cells remained (Dornhorst, 1951).

It is possible to estimate donor's and patient's red cell life span simultaneously by combining the Ashby and radioactive chromium techniques.

#### Red Cell Survival Studies in Ten Cases of Carcinoma.

An investigation of red cell survival in carcinomatosis was undertaken by Dr. N. Hughes-Jones and myself at the Medical Research Council's Blood Transfusion Unit, Postgraduate Medical School, London. The results of studies

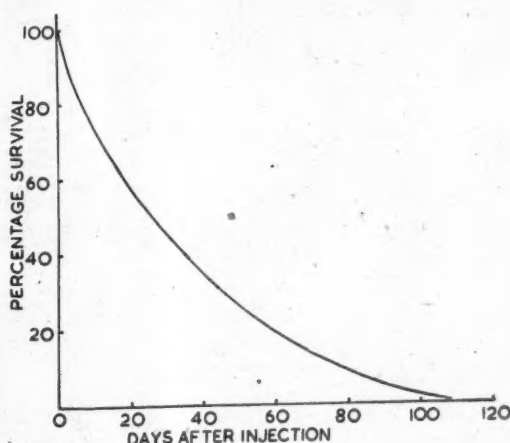


FIGURE 1.  
Showing rate of disappearance of <sup>51</sup>Cr in 11 normal subjects, after each subject's own cells had been labelled and reinjected. (Drawn from data of Mollison and Veall, 1955.)

which have been completed in the first 10 cases will be briefly discussed in this paper. The findings in these cases and in the remainder of the group will be reported elsewhere by Dr. N. Hughes-Jones and myself. In the interim my conclusions must be regarded as tentative.

The following summarizes the main clinical features of 10 patients investigated by the Ashby technique, the <sup>51</sup>Cr technique, or both. The diagnosis of carcinoma was confirmed by biopsy or autopsy, with one exception. The sites of primary growth were as follows: bronchus, four instances; breast, two; colon, one; uterus, one; prostate, one; and "ovary", one. Six subjects had metastases in bone, one had widespread secondary deposits in the skin. With one exception, all patients were anæmic (range of haemoglobin value, 6.5 to 11 grammes per centum). The anæmia in all patients was normochromic and normocytic. The blood picture was leuco-erythroblastic in three patients, and their reticulocyte counts were persistently raised.

The response to the Coombs test was positive in one case. In no case was there evidence of blood loss by haemorrhage.

Survival studies were commenced before radiation therapy was begun. With the exception of one patient who died on the thirty-eighth day, the transfused cells were followed until elimination was complete or almost complete.

The techniques used are shown in Table I.

The results of these studies are as shown in Table II.

Of the three patients who had a decreased red cell survival time, the reduction was slight in one (life span 100 days); in the other two it was considerable.

One of these is of particular interest, because haemolysis commenced after a period of apparently normal survival. The patient was suffering from carcinoma of the breast with widespread metastases to the skin. The haemoglobin value on her admission to hospital was 6.8 grammes per centum, and the blood film showed the typical picture of leuco-erythroblastosis. The patient was transfused with fresh cells from 1120 millilitres of blood, and her own cells were labelled with  $^{51}\text{Cr}$ . Both the transfused cells of the

TABLE I.

Technique.	Number of Patients.
Patient's cells + $^{51}\text{Cr}$ .. .. .	6
Patient's cells + $^{51}\text{Cr}$ and Ashby ..	2
Donor's cells + $^{51}\text{Cr}$ and Ashby ..	2
Total .. .. .	10

donor and her own cells had a normal survival up to the twenty-eighth day; however, on the twenty-sixth day it was found that the values for both the transfused cells and her own cells were 15% lower than the expected values. The result of the Coombs test was negative. On the eighty-sixth day, when no radioactivity remained, her own cells were relabelled with  $^{51}\text{Cr}$  and injected. The hemolytic process was now found to be moderately severe, as 30% of these cells were destroyed in six days. The patient had received no radiation therapy which might have caused hemolysis at or about this period. The onset of hemolysis coincided with a pronounced deterioration in her clinical condition.

TABLE II.

Red Cell Life Span.	Number of Patients.
Normal .. .. .	7
Decreased .. .. .	3
Total .. .. .	10

The other patient who had a greatly reduced red cell survival time had ascites, presumably due to secondary deposits, as malignant cells were identified in the peritoneal fluid. The diagnosis of hemolytic anemia was established before cell survival studies were commenced. The Coombs test result was positive, the serum bilirubin level was persistently raised, and the anemia was leuco-erythroblastic. The observations obtained by both the Ashby and the  $^{51}\text{Cr}$  techniques were made on the donor's cells only.

It is of interest to note that one patient who had a normal survival of donor's cells as determined by the  $^{51}\text{Cr}$  and Ashby techniques had widespread metastases to bone, a leuco-erythroblastic blood picture and a persistently raised reticulocyte count. Unfortunately the life span of this patient's own cells was not studied.

#### Discussion.

From these observations it would appear that a reduced red cell life span is not the main factor in the pathogenesis of the anemia in this group of patients. However, these findings do suggest that hemolysis occurs more frequently than is generally realized. Possibly it is a common event in the terminal stages of the patient's illness.

The mechanism of the increased hemolysis is not known, and except in a few instances it does not appear to be due to the formation of anti-red-cell antibodies. In one patient

of this group hemolysis developed suddenly during the course of survival studies. The hemolytic process involved both the patient's own cells and those of the donor to the same extent; this suggests that the causative factor, whatever it may be, is probably extracorporeal.

Despite the similarity of the behaviour of donor's and patient's cells in this single instance, it remains to be established whether survival studies on cells other than those of the patient give a true indication of the incidence of hemolysis in conditions not due to demonstrable anti-red-cell antibodies.

#### Summary.

Results of red cell survival studies with the Ashby and  $^{51}\text{Cr}$  techniques showed that the red cell life span was reduced in three out of 10 cases of carcinoma.

It is tentatively suggested that a reduction of red cell life span is probably not the main factor in the production of chronic anemia of carcinomatosis uncomplicated by blood loss, nutritional deficiencies, infection or irradiation.

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#### A METHOD OF IRIDOTOMY.

By E. TEMPLE SMITH,  
Sydney.

A DRAWN-UP IRIS with obliteration of the pupillary area is occasionally met with after a complicated cataract extraction. It will most often occur in secondary cataract following prolonged chronic iritis.

The methods of dealing with it described in text-books are far from satisfactory. To attempt to make a pupil anywhere near the upper region with needles or Ziegler's knife is looking for trouble.

A method which I have used with good results many times in the past I alluded to incidentally in a paper on secondary cataract in 1945. Briefly it is this. A broad



FIGURE 1.

keratome is inserted in the cornea three millimetres above the lower limbus and pushed in to make an incision eight to ten millimetres wide. A Graefe knife is then passed horizontally through the incision to puncture the iris at a point higher than the corneal opening, where the lower edge of the new pupil is designed to be. The knife is withdrawn and a pair of fine spring-scissors is entered, one blade through the Graefe hole and the other between



iris and cornea. One snip of the scissors and a vertical black pupil remains. There is no hæmorrhage and no reaction.

The object of the Graefe knife puncture is to avoid any drag on the iris by the relatively blunt scissor-point. The keratome incision must be made three or four millimetres above the limbus, not at the limbus. If the globe is very sunken, when insertion of the scissors may present difficulty, the operation can be performed from the temporal side.

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### THE AUSTRALIAN RED BACK SPIDER (*LATRO-DECTUS HASSELTII*): I. PREPARATION OF ANTISERUM BY THE USE OF VENOM ADSORBED ON ALUMINIUM PHOSPHATE.

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ALTHOUGH many experimental investigations have been carried out on the black widow spider (*Lactrodectus mactans*), its near relative, the red-back spider (*L. hasseltii*), which is widely distributed in Australia, has received comparatively little attention. Antisera against the venoms of a number of spiders and scorpions have been prepared in different countries and employed successfully for the treatment of bites (Bogen, 1926; Smith and D'Amour, 1939; Maretic and Stanic, 1954; Balozet, 1955).

The investigation described in this communication presents observations and data relevant to the preparation of a potent antiserum against the venom of the red-back spider.

#### Method of Obtaining Venom.

In his pioneer studies on the toxicity of the venom of the red-back spider, Kellaway (1930) obtained the venom by extracting the head and prothorax of the spider in saline. Such an extract will also contain a variety of other materials besides venom. Thoracic contents, juices from the intestinal system and water-soluble materials present in the chelicerae produce, in the case of *L. hasseltii*, toxic effects of their own which are quite distinct from those produced by venom. For the present investigation, in order to obtain venom which would be reasonably free from other toxic materials, the venom glands of the spider were isolated.

Red-back spiders were obtained from various collectors in Victoria. The spiders were transmitted by post in glass tubes plugged with cotton-wool. During the winter and spring the mortality rate was less than 5%, provided only one spider was contained in each tube. Up to date about 800 spiders have been received.

In the laboratory the spiders were kept in glass tubes. They were fed once a week with two or three slaters. Alternatively, the spiders readily accepted tap water or sheep's blood presented with a Pasteur pipette. During their stay in the laboratory the spiders appeared to suffer no ill effects, their bodies remained shiny, they rapidly killed insects whenever these were introduced, and during the months of October and November many made egg sacs from which spiderlings emerged. Amongst the 800 spiders received throughout the winter and spring, only one male was present.

In order to obtain venom, the spider was anaesthetized with ether and embedded on a slide in paraffin. Under the dissecting microscope a transverse incision was made with the point of a fine knife behind the second row of eyes, and the venom glands were removed. Figure 1a

shows the venom glands after exposure through the incision. Their insertion into the lumen of the chelicerae is shown in Figure 1b.

When freshly removed, the venom glands are glistening and white in colour. They are curved, with one end pointed and the other end prolonged into a duct (Figure 1b). They are 2.0 to 2.5 millimetres long and 0.3 to 0.4 millimetres thick. The duct is about one millimetre long. Soon after exposure to air the glands contract strongly, and if they are left exposed they will dry out in a matter of minutes. With practice a single worker can dissect the glands of about 40 spiders in one hour.



FIGURE 1A.

Thorax of spider before exposure of venom glands.

The glands from the required number of spiders were broken up in a measured quantity of normal saline with the points of two sharp needles. Because of the small size and the elasticity of the glands, this was the most tedious part of the procedure.

After centrifugation, the supernatant was collected and the precipitate, consisting of gland debris, was ground up in a further measured quantity of saline and again centrifuged. This procedure was repeated once more.

This mode of extraction proved highly efficient. On several occasions when, after extraction, the whole of the residue of 40 glands was injected into a mouse, the animal rarely died. Usually the contents of less than half a gland was sufficient to kill a mouse.

Now and again, when enough spiders were available, larger batches of venom were prepared in distilled water and the clear extracts were freeze-dried. Calculated on the quantity of venom thus obtained from 100 spiders, the average amount of venom was 0.08 milligramme per spider. However, for practical purposes it was found more convenient to work with extracts in saline and express the venom content in terms of fraction of a spider which, if desired, could be converted into milligrammes of venom.

#### Toxicity in Mice.

Mice weighing between 22 and 30 grammes were used. The lethal dose of venom depended on the route of administration. From Tables I and II it can be seen that venom was ten times more toxic if injected intracerebrally than if given intraperitoneally. When it was administered intravenously, the LD50 was about the same as after intraperitoneal injection.

The toxicity of freeze-dried venom is shown in Table III. On the basis of 0.08 milligramme of venom per spider,

will die do so within two to three days. For assay work all animals were observed for a period of eight days.

On several occasions, one spider was induced to bite the tails of three different mice in succession. The first mouse



FIGURE 18.

Thorax of spider after exposure of venom glands.

it compared reasonably well with the results shown in Table II from the use of fresh venom. The difference in toxicity may have been due to some loss of toxicity of the venom during freeze-drying or to variation of venom content amongst spiders.

The intraperitoneal injection of venom into mice resulted in signs which were similar to those produced by the natural bite of a spider. They included lachrymation followed by closure of the eyes, watery discharge from mouth and nostrils and in one or two days paralysis and rapid loss of weight. With the paralysis and stiffness of the spine, the hind part of the animal became extremely flattened, both ventral and dorsal surfaces being almost parallel and separated by less than half an inch. An early stage of this condition is shown in Figure IV.

When one listened to the breathing of mice a few hours after the injection of toxic amounts of venom, a peculiar crepitant sound was heard at a distance of several inches. Pulmonary oedema was a frequent post-mortem finding in mice that died within six hours after the injection of venom or after a spider bite.

After an adequate bite of a spider or the injection of the venom contained in about 0.4 spider, a mouse will usually be found dead in its cage the following morning. With smaller amounts of venom, up to six days may elapse before death occurs, although the majority of mice that



FIGURE 19.

Insertion of venom glands into chelicerae.

which was bitten was dead the next day. The second mouse was ill for three days and then recovered. The third mouse showed no symptoms. When the venom glands

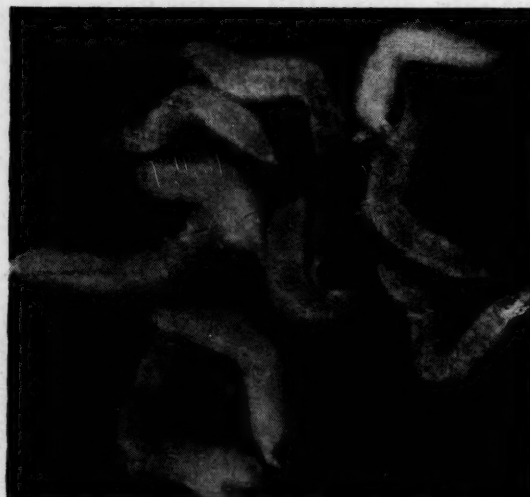


FIGURE 20.

Isolated venom glands in normal saline.

of a spider which had bitten three mice were extracted, the whole extract still contained enough venom to kill a mouse by the intraperitoneal route.



### Adsorption of Venom on Aluminium Phosphate.

Smith and D'Amour (1939) used 150 black widow spiders for the production of an antivenene in rabbits. The use of such a number of spiders per rabbit would have severely depleted our stock of spiders. It was decided to try adsorbing the venom on a mineral carrier, with the object of being able thereby to reduce the amount of venom necessary for the production of an antiserum with a satisfactory titre.

TABLE I.  
Toxicity of Venom Given by the Intraperitoneal Route.

Fraction of One Spider.	Number of Mice.	Number That Died.
0.025	10	0
0.05	10	2
0.1	10	4
0.2	10	7
0.3	10	9
0.4	10	10
0.5	10	10

After some trials it was found that at pH 5.0 venom was adsorbed on aluminium phosphate. At pH 7.5 venom adsorbed on aluminium phosphate went back into solution. The scheme shown in Figure V summarizes the results of a typical adsorption and elution experiment.

TABLE II.  
Toxicity of Venom Given by the Intracerebral Route.

Fraction of One Spider.	Number of Mice.	Number That Died.
0.003	10	0
0.006	10	0
0.012	10	2
0.025	10	10
0.05	10	8
0.1	10	9
0.2	10	10

Solutions of venom exposed only to changes of pH 5.0 to 7.5 showed no alteration in toxicity. The efficiency with which aluminium phosphate adsorbs venom was shown by the fact that, after treatment with aluminium phosphate, the supernatant of a solution containing the venom of six

TABLE III.  
Toxicity of Freeze-Dried Venom (Intraperitoneal Route).<sup>1</sup>

Venom. (Milligramme.)	Number of Mice.	Number that Died.
0.005	5	0
0.01	5	1
0.02	5	3
0.04	5	4
0.06	5	5
0.08	5	4
0.1	5	5

<sup>1</sup> An amount of 0.08 milligramme of venom is equivalent to the venom of one spider.

spiders failed to kill a mouse. On the other hand, if venom was adsorbed on aluminium phosphate and injected into mice, the LD<sub>50</sub> was somewhat higher and death occurred later than with an equivalent amount of venom in solution.

### Production of Antivenene in Rabbits.

For immunizing rabbits, the venom glands of the required number of spiders were disintegrated in normal

saline, buffered at pH 5.0, as described previously. After the final centrifugation, aluminium phosphate was added to the supernatant in a concentration of 15 milligrammes per cubic centimetre and allowed to stand at room temperature for one hour. After centrifugation, the precipitate, consisting of aluminium phosphate and adsorbed venom, was washed twice with buffered saline and finally suspended in normal saline for injection into rabbits.



FIGURE IV.

Toxic effects of spider venom in a mouse. Note closure of eyes and paralysis of hind part of body.

Two male rabbits each weighing three kilograms were used. The first injection contained the adsorbed venom of five spiders. Two weeks later the adsorbed venom of ten spiders was injected, and two weeks later a similar dose. Before the third injection, and seven days later, the rabbits were bled and the antivenene titre was estimated. No ill effects were noticed in the rabbits throughout the whole course of injections.

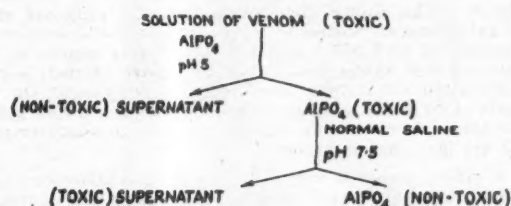


FIGURE V.

Scheme summarizing the results of a typical adsorption and elution experiment.

For the titration of antiserum the LD<sub>50</sub> of the particular batch of venom used was estimated as exemplified in Table I. Amounts of venom corresponding to four LD<sub>50</sub> were mixed with varying amounts of serum. The final volume of each dilution was made up to 1.5 cubic centimetres with normal saline and incubated at 37° C. for thirty minutes. With each dilution five to ten male mice were injected intraperitoneally. The dilution of serum which after injection resulted in the survival of 50% of mice was considered to have neutralized three LD<sub>50</sub> of venom.

Table IV gives the results of the titration of one rabbit serum obtained seven days after the last immunizing dose. The LD<sub>50</sub> of the venom used for this titration was 0.2 spider. From Table IV it can be seen that 0.04 cubic centimetre of serum neutralized three LD<sub>50</sub> of venom; 1.0 cubic centimetre of serum will, therefore, neutralize 75 LD<sub>50</sub>, or the venom of 15 spiders. On the basis of 0.08 milligrammes of venom per spider, this corresponds to 1.2 milligrammes of venom. By the use of freeze-dried venom it was found that 1.0 cubic centimetre of serum

neutralized 1.4 milligrammes of venom. The serum of the second rabbit was found to neutralize 0.96 milligramme of venom.

A similar method of titration was used for the sera collected a fortnight after the second dose of adsorbed venom. It was found that 1.0 cubic centimetre of the two rabbit sera neutralized the venom of three and four spiders respectively.

No protection was observed by the use of normal rabbit serum or several snake antivenenes. The antiserum has proved effective in the treatment of mice bitten by the red-back spider and is now awaiting clinical trials.

TABLE IV.  
Assay of Rabbit Antiserum.

Fraction of One Spider.	Amount of Serum. (Cubic Centimetre.)	Number of Mice.	Number That Died.
0.8	0.2 (antiserum).	10	0
0.8	0.1 (antiserum).	10	0
0.8	0.05 (antiserum).	10	1
0.8	0.04 (antiserum).	10	4
0.8	0.03 (antiserum).	10	8
0.8	0.02 (antiserum).	10	10
0.8	0.01 (antiserum).	10	9
0.8	0.005 (antiserum).	10	10
0.8	NIL.	10	10
0.8	0.2 (normal rabbit serum).	10	10

#### Discussion.

For the production of antivenene against the venom of the black widow spider in a sheep, extracts from 3000 spiders have been injected over a period of six months (Smith and D'Amour, 1939). One cubic centimetre of the serum thus produced neutralized 45 LD<sub>50</sub> of venom (D'Amour, 1936).

By injecting the aqueous extracts of venom glands of 150 black widow spiders into a rabbit over a period of eleven weeks, Smith and D'Amour (1939) produced after 35 injections an antiserum of which one cubic centimetre neutralized 30 LD<sub>50</sub>. As the LD<sub>50</sub> of this venom in the rat was 0.25 spider, one cubic centimetre of their serum neutralized the venom contained in 7.5 spiders. On the basis of 0.126 milligramme of venom per black widow spider (D'Amour *et al.*, 1936), this corresponds to approximately 0.9 milligramme of venom.

A spider serum is generally accepted as satisfactory for therapeutic purposes if one cubic centimetre will neutralize one milligramme of venom. In fact, in the case of scorpion venom it has never been possible to prepare an antiserum of which one cubic centimetre will neutralize much more than 1.2 milligrammes of venom (Balozet, 1955).

For the treatment of patients bitten by *Latrodectus tredecimguttatus*, Marešić and Stanic (1954) have successfully used eight to ten millilitres of a rabbit serum, one cubic centimetre of which neutralized the venom of 2.5 spiders.

The use of adsorbed venom as described here permitted the production of a satisfactory antivenene with the venom of a relatively small number of spiders. Only three injections were required, and relatively large doses of venom could be administered without the production of toxic symptoms. The application of a similar method of immunization may prove useful for the production of antisera against the bites of other venomous arthropods.

#### Summary.

1. The venom of the Australian red-back spider (*L. hasseltii*) can be adsorbed on aluminium phosphate.
2. The venom thus adsorbed can be used for the production of antivenene in rabbits.
3. After three injections of adsorbed venom obtained from 25 spiders over a period of five weeks, an antivenene

was produced, one cubic centimetre of which neutralized more than one milligramme of venom.

#### Acknowledgements.

I am grateful to Dr. F. G. Morgan for providing the facilities to carry out this investigation. The valuable technical assistance rendered by Miss M. Kennedy and the help obtained from Mr. J. R. Garnet and Mr. Crosbie Morrison in establishing a supply of spiders is gratefully acknowledged. I am also grateful to Mr. M. L. Courtney for collecting more than 400 spiders, and to Mr. F. J. Dempster for taking the photographs. Special thanks are due to Dr. J. J. Graydon for making his wide experience on the assay of snake antivenene available for this investigation.

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## Reports of Cases.

### SYMBIOTIC GANGRENE.

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SYMBIOTIC or "progressive bacterial synergistic" gangrene is a distinct entity, but on account of its rarity the diagnosis is often overlooked until the patient's life is in grave danger. This was the case with the first patient about to be discussed; the second patient had the doubtful good fortune to be admitted to the same clinic within a few days of discharge of the first, and immediate diagnosis was made, with consequent reduction by 70% of stay in hospital, the danger to life being negligible.

Although many ulcers mentioned in the older literature were probably symbiotic gangrene, the first record of the condition as such was by Brewer and Meleney in 1926. Since then, numerous writers have described it, the majority in association with post-operative abdominal wounds, one case ending fatally. Various forms of treatment were tried, but were not bold enough; they were of no avail, so that the huge, sloughing ulcer became incompatible with life. It was realized later that wide excision was essential, and in 1935 Holman's statistics indicated that the use of the diathermy knife gave the best results.

#### Case 1.

A., a male patient, aged thirty-seven years, a refuse collector, was admitted to hospital on March 30, 1954, with a history of having awakened one morning three or four weeks previously with an irritable ankle, which he scratched vigorously. During the following days the ankle became swollen and painful and the skin purplish-red. A week later the skin broke down and discharged an offensive black material. Various local applications were used without benefit, and deterioration of his general condition ensued his admission to hospital.

Examination of the patient revealed him to be a thin, distressed man whose temperature was 97.4° F. and pulse rate 128 per minute. Over the medial malleolus and surrounding areas of the right ankle was an irregularly



shaped ulcer approximately four inches in diameter. The base was covered by a dark slough, and under this could be seen intact deep fascia. The edge was irregular, sharply demarcated, raised about a quarter of an inch, considerably undermined and surrounded by a narrow purple ring, but with little inflammatory reaction. The diagnosis of chronic cutaneous ulcer in a debilitated man was made, the infection being caused by a virulent organism from the refuse which he handled continuously.



FIGURE I.

The treatment instituted was as follows: (i) saline baths and eusol packs, (ii) injection of penicillin, 500,000 units twice a day. Culture from the wound yielded an abundant growth of coliform bacilli sensitive to chloramphenicol and insensitive to penicillin, and a non-haemolytic streptococcus sensitive to penicillin. The penicillin therapy was changed to chloramphenicol, and the local treatment was continued. On April 8, nine days after the patient's admission to hospital, a split skin graft was applied to the ulcer, which now appeared much clearer.

On April 16 the dressings were taken down, to reveal that most of the graft had taken, but some extension of the ulcer had occurred.

On April 29 a further split skin graft was applied.

On May 5 malodorous dressings were removed, to show that none of the recent graft had taken, and that there was further extension. Culture of the discharge, which had now become profuse, produced a growth of non-haemolytic streptococci and coliform bacilli, both sensitive to "Terramycin". Saline baths were then reinstituted, polymyxin ointment was applied locally, and the antibiotic was changed to "Terramycin".

By May 10 the patient's general condition had deteriorated considerably; he had lost much weight, and

he looked pale and sallow, and was drowsy during much of the day. The ulcer had spread to twice its size on his admission to hospital, and the edge showed no signs of healing, although the central portion was covered by healthy skin graft.

The diagnosis of sybiotic gangrene was made, and immediately wide diathermy excision was performed. Subsequently much bleeding occurred from the edge, despite pressure dressings and blood transfusions, and the patient had to be returned to the operating theatre twice in the ensuing twelve hours for undersewing of bleeding points in the skin edge which was oozing from its whole length; this was thought to be due to a defect in the clotting mechanism. So great was the haemorrhage that six pints of blood had to be given during twenty-four hours.

On May 17 the ulcer was clear and granulating, and attempted culture produced no growth of organisms. Its size was 10 inches by six inches, approximately four times



FIGURE IIA.

its size on the patient's admission to hospital. Since diathermy excision, all pain had disappeared and the patient's general condition had started to improve. He was now eating good meals, which he had previously ignored.

On May 20 a split skin graft was sewn on. On May 27 removal of dressings showed only a 50% "take", but the edge looked healthy and was epithelializing. On June 11 healing was complete. The patient was allowed to sit out of bed without weight-bearing. On June 16 he was discharged from hospital. His weight had increased by 20 pounds since his operation, and he looked very well.

Figure I is a photograph of the lower part of his leg taken five weeks after his discharge from hospital. Unfortunately no photograph was taken on his admission to hospital.

#### Case II.

B., a housewife, aged twenty-seven years, had two children. She was admitted to hospital on June 9, 1954,

with an ulcer on the right shin. It had appeared two months previously, and for three weeks had been rapidly increasing in size and causing much pain. Some twelve months before her admission to hospital, a sore had developed on the dorsum of her right foot, due to an ill-fitting shoe. This had been slow to heal, and did not finally close until several weeks after the appearance of the present ulcer—apparently spontaneously. Numerous applications and injections of penicillin proved ineffective, and the recent rapid increase in size and severe pain brought the patient to hospital.

On examination of the patient, her temperature was 99.2° F. and her pulse rate 120 per minute. Over the middle of the right shin was an irregular ulcer six inches by three inches in size. The border was serpiginous, raised, undermined for one and a half inches and surrounded by a zone of purplish skin. The base was covered by a dirty black slough, under which was deep fascia. No muscle was exposed. There were also several

small remaining area of granulation tissue was covered by split skin graft. On July 3 complete healing had taken place, and the patient was discharged from hospital.

Figures IIIA and IIIB were photographs taken three weeks after her discharge from hospital. The graft was still not strong, as is shown by the abrasions which had been caused by minor injuries. The edge, although dark in the photograph, was quite healthy.



FIGURE IIR.

small healing ulcers on the foot. The patient looked ill and distressed. Figures IIA and IIB show the appearance at this stage. The diagnosis of symbiotic gangrene was made, and arrangements were made for operation next day. Chloramphenicol therapy was commenced. Culture produced only a growth of non-haemolytic streptococcus, but subsequently a growth of *Staphylococcus aureus* was also obtained.

On June 10 wide diathermy excision was performed, well beyond the border of the advancing gangrene. Saline baths were then given twice a day. On June 13 clean, healthy granulations were now present, and no further extension had occurred. A split skin graft was applied in "postage stamps". On June 21 the dressings were removed, and most of the graft was seen to have taken. No extension of the ulcer had occurred. On June 29 a



FIGURE IIIA.

#### Discussion.

##### Bacteriological Considerations.

Meleney insisted that the causative organisms were the *Staphylococcus aureus* and the micro-aerophilic non-haemolytic streptococcus. However, other investigators have implicated a variety of combinations of organisms; in fact, any pair which act as synergists, the one aerobic and the other anaerobic or micro-aerophilic, can set up the process, the micro-aerophilic organism advancing under the undermined flap and preparing the ground for the pair which then act together and cause the gangrene. Meleney tested the pathogenicity of the organisms isolated from the patients in his care, and found that injected separately into animals they caused minimal lesions, but if given together they caused a large lesion of cutaneous gangrene.

Holman investigated a series of 25 cases of progressive ulceration, in only 10 of which he found the micro-aerophilic non-haemolytic streptococcus and the *Staphylococcus aureus*. In the other cases there was a variety of organisms, in three of them the combination of the streptococcus and *Bacterium coli* found in Case I of this paper.



### Pathological Findings.

The lesion is perhaps best described as a full thickness skin ulcer surrounded by a ring of advancing gangrene where three distinct zones are seen—outer red flare, middle purple zone and inner black zones. The margin is serpiginous, raised and slightly undermined. The base is covered by a dirty slough.

### Clinical Course.

A surgical wound is usually the point of entry, but it may be via a minor wound or abrasion. The first appearance is a purplish swelling; the skin later breaks down



FIGURE IIIb.

and the ulcer extends slowly, steadily and relentlessly to a fatal result, unless adequately treated. One patient mentioned by Holman developed the condition after appendectomy, and died nearly four years later, the entire surface of the anterior abdominal wall and most of the surface of the lower limbs being involved. Exhaustion seems to result more from pain and loss of sleep than from toxæmia. A patient of Churchill's recovered only to lose her sanity and be admitted to a mental hospital.

### Differential Diagnosis.

The differential diagnosis has been discussed at length by Meleney. The important conditions to distinguish are progressive streptococcal ulceration, human bite infection (fusio-spirochaetal gangrene), amebic gangrene and gangrenous impetigo.

### Summary.

Two cases of symbiotic gangrene are presented. They illustrate well the essence of the management of the problem: (1) early diagnosis, which entails keeping the condition ever in mind when dealing with ulcers of the skin; (2) wide excision, preferably by diathermy, and skin graft.

### Acknowledgement.

I should like to thank Mr. Ian Hamilton for permission to publish these cases.

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### Reviews.

**Morals and Medicine: The Moral Problems of the Patient's Right to Know the Truth, Contraception, Artificial Insemination, Sterilization, Euthanasia.** By Joseph Fletcher, with a foreword by Karl Menninger, M.D.; 1955. London: Victor Gollancz, Limited. 8" x 5", pp. 250. Price: 20s. 6d.

THIS book deals in the main with the ethical aspects of five medical problems: the right of the patient to know the truth, contraception, artificial insemination, sterilization and euthanasia. The author, who is professor of pastoral theology and Christian ethics at the Episcopal Theological School, Cambridge, Massachusetts, approaches each problem with considerable independence of mind, the "bias" of his ethical standpoint being (to use his own words) "apart from its frame of reference in Christian faith, probably best pinpointed as personalist". By personalism he means "the correlation of personality and value; the doctrine, that is, that personality is a unique quality in every human being, and that it is both the highest good and the chief medium of our knowledge of the good". With this viewpoint few will quarrel, but many will disagree with Professor Fletcher's attitude to the problems raised, as he fully expects. In many instances he is at variance with the conservative orthodox theologian, and on some major issues (notably euthanasia) he supports an attitude not accepted by the organized medical profession in most countries. For all that, even those who will inevitably differ from him can read his book with profit. He writes with vigour, scholarship and a good deal of shrewd common sense, and he is palpably sincere. Those who agree with him will be delighted to have such an able exponent of their views. Those who disagree will receive a healthy stimulus to do some first-hand thinking. The great virtue of the book is that it does not aim to be pontifical, let alone to remove from the practising doctor the right or the responsibility of making his own decisions. Professor Fletcher has well summed it up thus: "If doctors undertake to care for the health of our people, they must undertake to do it conscientiously. This is to say that they have to put their consciences to work, as they do their skills."

**The Object Relations Technique**, by Herbert Phillipson, M.A.; 1955. London: Tavistock Publications, Limited. 8½" x 5½", pp. 232, with 12 illustrations. Price: 21s.

"THE OBJECT RELATIONS TECHNIQUE" is a new projection test designed to assess personality with special reference to deeper motivation. In the chapter on the theoretical basis of this technique the author points out that in psycho-analytical theory adult social relationships tend to be the reflection of unresolved infantile conflicts over relationships to parents, nurses or others representing authority. To an increasing extent the study of processes by psychologists has been concentrated on the basic reactions involving personal relationships. The process of perception, for example, is to be understood fully only in terms of personal relationships and the cultural social milieu. Mr. Phillipson felt the need for closer links between the clinical psychologist trained to apply a variety of tests of aptitude, skills and mental functions, and the psychiatrist with his more impressionistic assessment of personality reported, at any rate in the Tavistock Clinic, in psychoanalytical terms. "The Object Relations Technique" (why not "Social Relations"?) is an attempt to provide such a link.

The test consists of three series of pictures of one, two and three persons, seen as it were through a London fog, on 9 by 11½ inch cards, most in black and white, some with a dab of colour. The pictures are ambiguous and, as in all projection tests, designed to evoke some degree of fear and

anxiety. In the result special attention is paid to failure to refer to characters in detail, unusual characterization, unusual perceptions, and failure to attempt a solution. One in forty patients failed to produce a worthwhile result.

It seems curious that "normative" data were obtained from test results in 50 patients attending the psychiatric out-patient department, and 40 normal adolescent girls, who were compared on this test by another worker with 50 delinquent girls. But the author, in admitting the difficulty of selecting a "normal" group for control, points out that most projection tests including his own allow of such a wide range of responses that a normal standard would be hard to establish. Nevertheless, there seems little doubt that these tests do help to reveal motivation and clarify social attitudes and may then constitute a valuable accessory to examination by the psychiatrist.

**Systemic Associations and Treatment of Skin Disease**, by Kurt Wiener, M.D.; 1955. St. Louis: The C. V. Mosby Company, Melbourne: W. Ramsay (Surgical), Limited. 10" x 7", pp. 556, with 90 illustrations. Price: £9 7s.

This work is a sequel to the author's "Skin Manifestations of Internal Disorders", published in 1947. The latter publication described the skin changes associated with internal or systemic diseases, whilst the new work under review attempts to show the relationship between dermatology and general medicine.

The author admits that there is sure to be some overlapping in a few instances, but it must be clearly understood that this work is not a second edition of the original, but that, as its title implies, it has an entirely different approach.

The pattern in the main is (a) to describe the clinical features as seen on or in the skin, (b) to discuss aetiology, (c) to show systemic relationship to the various organs of the body, and (d) to discuss and describe internal treatment.

It is important to note that external treatment *per se* receives no consideration at all, even in such conditions as *acne vulgaris* or psoriasis. The emphasis is all on systemic therapy.

Certain conditions such as *lupus erythematosus*, scleroderma and pemphigus are described in great detail according to the pattern as outlined.

There are interesting chapters on hormones, antibiotics, drugs, vitamins, diets, spa therapy and unorthodox methods. A feature is the number of references, there being no less than 2759.

This book must have involved a great amount of study, and is beautifully produced, with excellent illustrations. We know of no other single volume that contains so much reliable information. Most of this knowledge could be obtained from various sources, such as the new editions on dermatology and general medicine, and the appropriate current journals.

The work can be recommended to those physicians and dermatologists who want an armchair approach to the material under review.

**The Extra Pharmacopoeia (Martindale): Incorporating Squire's Companion**, published by direction of the Council of the Pharmaceutical Society of Great Britain; Twenty-Third Edition: Volume II; 1955. London: The Pharmaceutical Press. 7½" x 5", pp. 1534. Price: 57s. 6d.

The first edition of this monumental work—"The Extra Pharmacopoeia"—was issued as a single volume in 1883 by the now almost legendary "Martindale".

By 1912, this work, then in its fifteenth edition, was first published in two volumes, the second volume, of some 370 pages, having its origin as an analytical addendum to the chemicals and materia medica dealt with in Volume I.

In the twenty-third edition of the "E.P.", 1955, Volume II, now grown to a 1500 page book, is still primarily devoted to this purpose, but presents in addition a number of new and revised sections having more direct interest to the practising physician. Among these will be reckoned those devoted to such currently attractive subjects as radioactive isotopes and radiotherapy, ion-exchange resins, clinical haematology, biochemistry of blood, faeces and urine, nutrition and vitamins, and drug sterilization.

An informative section is devoted to the relationship between chemical structure and pharmacodynamic activity, while to facilitate an understanding of the complex structures and of the no less complex nomenclature applied to modern drugs, a chapter intensely packed with a summary

of approved conventions in nomenclature has become increasingly useful.

Bacteriological and clinical notes covering the whole range of infections and infestations—from actinomycosis and ankylostomiasis to yellow fever and yaws—summarize the morphology, cultural characters and tests for the causative agents, clinical characters and differential features of the specific diseases, means of diagnosis and even treatment.

In the greatly expanded sections devoted to clinical biochemistry and hematology—as indeed in all others—the sheer quantity of information available is amazing. Data on "how to do it" cover almost every conceivable manipulation and test, from blood collection and marrow biopsy to immunological examination of blood stains. Interpretative tables and figures so freely available are a valuable reference for laboratory worker and clinician alike.

As in previous editions, proprietary medicines including many so-called ethicals, together with their formulae, are subjects of an interesting section. Details of the British code of standards in relation to the advertising of medicines, and of the recommendations of the Pharmaceutical Society of Great Britain merit study in relation to comparable problems in our own country.

As a source of accurate and readily available information the book is in itself a masterpiece, but through its wealth of abstracts and references, it opens the door to an infinitely wide field of information on subjects therapeutic, chemical, biochemical, analytical, bacteriological and pharmaceutical.

It is with considerable pleasure that we note the excellent job done by the Council of the Pharmaceutical Society of Great Britain in continuing and worthily extending the work of Martindale and in retaining the illustrious name of Martindale as a synonym for the "E.P."

**Anatomy and Physiology for Nurses**, by W. P. Gowland, M.D. (Lond.), F.R.C.S. (Eng.), and John Cairney, D.Sc., M.D., F.R.A.C.S.; Fourth Edition; 1955. Christchurch: N. M. Peryer, Limited. 8½" x 5½", pp. 472, with 199 illustrations. Price: 45s.

The appearance of the fourth edition of this book marks a progressive step in publishing in New Zealand, for it is the first time this work has been wholly published and distributed by the firm of N. M. Peryer, Limited, of Christchurch.

The pleasant fusion of the two subjects in one volume has been achieved in such a way as to present nurses with a concise practical work which gives them just the right amount of detail necessary without their having to learn each subject as such. Without divorcing structure from function, the authors discuss chapter by chapter the various bodily systems and show how their anatomical make-up is designed to facilitate their normal physiological processes. This has the effect of infusing life into the study of anatomy, which is an advantage, for, after all, nurses are entirely concerned with living tissue.

In the 451 pages are 199 diagrammatic illustrations, all of which give added clarity to the text. It would be pointless to particularize on any one chapter, and it is sufficient to commend the authors for producing such a well-planned and well-balanced text-book that must surely achieve world-wide popularity and boost medical publishing in the Antipodes.

All tutor sisters and doctors who lecture to nurses should certainly acquaint themselves and their pupils with this excellent work.

**The Principles and Practice of Surgical Nursing**, by D. F. Ellison Nash, F.R.C.S.; 1955. London: Edward Arnold (Publishers), Limited. 8½" x 5½", pp. 1016, with 371 illustrations. Price: 30s.

Few text-books for nurses run into as many as a thousand pages. Therefore Dr. D. F. Ellison Nash's "The Principles and Practice of Surgical Nursing", which has 1002 pages, is perhaps exceptional. However, it is such a comprehensive work that its appearance should be welcomed by all associated with surgical nursing. The volume is divided into 10 sections which embrace all aspects of surgical work, and the author stresses throughout the fact that the nurse is an essential member of the surgical team.

Some 56 pages are devoted to anaesthesia, and general chapters discuss such topics as wound care and dressings, infusion and transfusion, asepsis and sterilization, and ward equipment; being written from a practical viewpoint, the details discussed are most important to all nurses working in surgical wards. A most valuable chapter of fifty pages on



the operating theatre tells of theatre preparation, the care of instruments and various surgical techniques, besides giving many practical pointers that are learned only after long years of theatre experience. The general principles of all the surgical specialities are laid down, so the book can assist nurses no matter in what special branch they may be working.

Diagnostic and therapeutic X-ray technique from the nurse's angle is detailed together with radium therapy, and full instructions are given about the essential protective precautions to be taken when these powerful therapeutic agencies are used. In the chapter on orthopaedic surgery, splinting and plaster techniques are excellently described.

Besides being a guide for sisters and nurses in large hospitals, this work could be a vade-mecum for those in small or country hospitals, for it would be difficult to find a better practical guide to the problem of surgical nursing.

**Röntgen Interpretation**, by George W. Holmes, M.D., and Laurence L. Robbins, M.D.; Eighth Edition; 1955. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 9½" x 6", pp. 526, with 371 illustrations. Price: £5 10s.

PREVIOUS editions of this book were edited by Holmes and Ruggles. Since its first appearance, the work has been the most helpful work of its kind published in the English language. The authors point out in the introductory chapter (a) that Röntgen images are shadowgraphs; (b) that they are a record of the varying opacities through which the beam of X rays pass; and (c) that they are subject to the possibility of erroneous deductions consequent on the fact that they are shadows. These points should always be kept in mind. The röntgenogram is a projection on a flat surface of every plane between the tube and film. The present edition is larger than previous ones, owing to various advances, especially in cardiac, pulmonary and digestive work. A special section on fluoroscopy has been added. At the end of each chapter there is an adequate bibliography. The illustrations have all been printed in the "negative". Shadows likely to cause confusion, such as artefacts and irregular calcifications, are described at length, while anatomical and developmental anomalies are dealt with in an interesting manner. Cranial conditions are described and new methods of investigation are discussed. The chest section has been rewritten. The authors point out that the "survey" films, which are so popular, are only of value in demonstrating large lesions. Much new work has been included in the section on cardiac lesions, and the methods used in cardioangiography are described with accompanying excellent röntgenograms. The chapter on the abdomen is well worth study, and the authors recommend a careful investigation by plain film before proceeding to more intensive examinations. The authors also recommend that several upright films should be taken in gall-bladder investigations; they add a warning that in 10% of cases with gall-bladder filling there is cholecystitis present. The spot film is recommended for use in gastro-intestinal work, as small lesions may be missed by ordinary methods. The special chapter on fluoroscopy contains many interesting observations and great stress is laid on the dangers of prolonged screening to patient and to operator. The authors advise the use of small diaphragms and quick working. This important work is highly recommended for both beginners and experienced radiologists.

**Local Anaesthesia: Head and Neck**, by Sir Robert MacIntosh, D.M., F.R.C.S. (Edin.), F.F.A.R.C.S., M.D. (hon. causa), Buenos Aires and Aix-Marseille, and Mary Ostlere, M.B., M.R.C.P.E., F.F.A.R.C.S.: 1955. Edinburgh and London: E. and S. Livingstone, Limited. 9" x 6", pp. 146, with 145 illustrations. Price: 27s. 6d.

This book is beautifully produced. Regional anatomy bulks large in local anaesthesia, and the many clear anatomical diagrams in the book are most helpful.

It is unfortunate that, for cervical anaesthesia, the dangerous method of paravertebral block should be recommended. This has been given up long ago by surgeons who are recognized authorities on local anaesthesia, in favour of the much simpler and safer Kulenkampff method, which blocks the superficial branches of the plexus at the posterior border of the sterno-mastoid.

The method of blocking the vagus nerves at the base of the skull, for laryngectomy, is also to be condemned as dangerous and unnecessary. So also is the direction that general anaesthesia should be induced in this operation when the local anaesthesia wears off. Instead, the local anaesthetic agent should be reinjected.

Finally, for the anterior block of the stellate ganglion, the method described is very much inferior to the tissue displacement method described in 1951 by D. W. Smith.

A study of this book and its companion volumes from Oxford suggests that, on the whole, local anaesthesia is better left to the surgeon. He can more readily reinject when that is necessary.

**Thoracic Surgical Management**, by J. R. Belcher, M.S., F.R.C.S., and I. W. B. Grant, M.B. (Edin.), F.R.C.P. (Edin.), with a foreword by Sir Clement Price Thomas, K.C.V.O., F.R.C.S.; Second Edition, 1955. London: Baillière, Tindall and Cox. 8" x 5½", pp. 224, with 78 illustrations. Price: 21s.

THIS small book of 216 pages with 78 black and white illustrations serves an excellent purpose. It should be in all thoracic surgical wards as it is a valuable guide for resident medical officers. It describes briefly and clearly the minor procedure associated with the management of thoracic surgical patients, and precedes this with a similar description of the general principles underlying the procedures.

The chapter on aspiration of the pleura is probably the most valuable in the book. This is a procedure upon which resident medical officers engage frequently, yet often with failure. The author knows the pitfalls and has pointed them out. He mentions the value of the lateral X-ray film, and the common error of too low or too deep penetration with the needle. He mentions the optimum sites for aspiration following thoracotomy. A photostat of this section might well replace the pictures of the bronchial tree so often found adorning thoracic surgical departments.

The sections of bronchoscopy, bronchography, artificial pneumothorax and pneumoperitoneum are complete and thorough, as is the description of the principles underlying the management of empyemata.

It is difficult to find fault. One would like to have found greater detail in the chapter on lobectomy and segmental resection. The short essay on the post-operative air leak is admirable, yet the all-important suction pump has been dismissed in a line. This could with advantage have been elaborated.

This book is strongly recommended for thoracic surgical resident officers.

**Growth at Adolescence**, by J. M. Tanner, M.D., Ph.D., D.P.M.; 1955. Oxford: Blackwell Scientific Publications. 8½" x 5½", pp. 224, with 68 illustrations. Price: 32s. 6d.

THE author, who is senior lecturer in physiology at Saint Thomas's Hospital Medical School, University of London, has long been interested in the study of the physical growth during adolescence. In this monograph he has collected together not only the results of his own extensive investigations, but all relevant data from the literature. He commences by pointing out that there are three kinds of data relating to physical growth, and that not a little confusion has occurred in the past when this fact has not been taken into account in the interpretation of data. In a cross-sectional study each child is measured once and the resulting graph of growth is a composite one; in a longitudinal study each child is measured at intervals over the period of the study; a mixed longitudinal study is one in which two or three records are available for a number of children over a year or so, and a number of these records are combined to make the composite graph. In the study of growth at adolescence longitudinal records are essential because of the different chronological ages at which the growth spurt starts. The author has assembled a large number of longitudinal records of individual children, and from these he has been able to elaborate the characteristics of the various elements of the growth spurt. It has also been possible to show the interrelationship of the various components—for example, growth in height, weight, secondary sex characteristics and their relationship to chronological and osteological ages.

Considerable space is devoted to the factors affecting the adolescent spurt; these include the genetic and nutritional factors and the effects of illness. Attention is drawn to the secular changes which have been occurring over the last one hundred years: there has been a very striking tendency for the time of adolescence, as typified by the menarche or the growth spurt, to occur at progressively younger ages. The author has no firm explanation to offer for this.

The endocrinology of adolescence is treated in one chapter. Here the emphasis, as would be expected, is on the growth of the endocrine glands and their effects upon the growth process. Two other subjects discussed are motor development at adolescence and changes in mentality and behaviour at adolescence.

Throughout, the text is amplified by well-selected tables and graphs. In addition there are a number of excellent plates showing the standards of genital and breast development used by the author, the changes in body form, and the outline of the face in both boys and girls through adolescence.

While this is an excellent reference book for the clinician who is interested in the "problems" of adolescence, it should become a working text-book for all school medical officers and others whose task it is to supervise the health and growth of this age period.

**Biochemistry and the Central Nervous System**, by Henry McIlwain, Ph.D., D.Sc.; 1955. London: J. and A. Churchill, Limited. 9½" x 6", pp. 280, with 43 illustrations. Price: 40s.

A GREAT deal of research on the biochemistry of the brain has been carried out during the past thirty years, and although several thousand papers have been published there has been nowhere any collected account of the knowledge gained. Professor H. McIlwain, who has himself done so much in this field of work, has produced a book of 272 pages, "Biochemistry and the Central Nervous System". The author has set out to review critically all the more important observations on the chemical reactions taking place in the animal brain. The subject is an extremely difficult one if one's object is to understand how the brain works, and it cannot be said that we are yet near this understanding.

The author discusses the metabolism of the brain *in situ* and in separated cerebral tissues, the chemical composition of the brain and in very great detail the various changes such as glycolysis, oxidative phosphorylation and pyruvate metabolism which take place in the brain. The parts played by amino acid, vitamins and cerebral lipids are also studied. Among other matters discussed there is a section on depressants and excitants of the central nervous system. There is not much in here which would help one to understand their action in the living brain; even the effects of alcohol are dealt with in a meagre fashion. The book is essentially one for specialist biochemists and for these it is an excellently critical review of present knowledge about the brain. There is little, if anything, in the book which would, in the present state of knowledge, be of interest to physicians.

**Recent Advances in Neurology and Neuropsychiatry**, by Sir Russell Brain, Bt., D.M. (Oxon.), F.R.C.P., and E. B. Strauss, M.A., D.M. (Oxon.), D.Sc., F.R.C.P., with the assistance of Denis Hill, M.B., F.R.C.P., D.P.M., Douglas Northfield, M.S., F.R.C.S., and David Sutton, M.D., M.R.C.P., F.F.R., D.M.R.D.; Sixth Edition; 1955. London: J. and A. Churchill, Limited. 8" x 5", pp. 322, with 46 illustrations. Price: 30s.

THE opening chapters of this book are devoted to the functions of the normal cerebrum. Leucotomy is discussed at some length with illustrations reproduced from Sargent and Slater's "Physical Methods of Treatment". The authors are more impressed by results in obsessive-compulsive states and in agitated involuntional depressions than in schizophrenia and cases in which intractable pain is present. The chapter on consciousness and unconsciousness includes a review of experimental work and theories as to the role of the central reticular formation in the brain stem. Differentiation of functions and morphology in the cerebellum still lack a satisfactory correlation. Spondylosis, a subject in which Sir Russell Brain has made important contributions, is well illustrated by several plates. In the chapter on virus diseases the important question of control of the spread of infection, particularly in schools, is discussed in some detail.

The section on electroencephalography contributed by Dr. Denis Hill is of special interest to both neurologists and psychiatrists. After a full review of the physiology of electrical activity in the brain, the effect of drugs on the electroencephalogram and abnormal rhythms in the epilepsies, space-occupying lesions and cerebral trauma, recent work on immaturity reactions in psychopathic and other psychiatric states is summarized. In vasovagal syncope, the "mesencephalic seizure", bilateral synchronous slow waves may sometimes be demonstrated.

Improvements in old methods and new techniques have widened the scope of diagnosis offered by the neuro-radiologist especially in pontine tumours which Dr. D. Sutton has made his particular study. Dr. W. C. Northfield deals with intracranial tumours from the surgeon's angle.

This work, which has been rewritten throughout since the last edition, presents in a reasonably concise and well-

integrated form the manifold advances in our knowledge of the activities of the brain, and will be indispensable for neurologists and psychiatrists whose interests are yearly becoming closer.

## Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Child Health and Development", by various authors, edited by Richard W. B. Ellis, O.B.E., M.A., M.D., F.R.C.P.; Second Edition; 1956. London: J. and A. Churchill, Limited. 8½" x 5½", pp. 535, with illustrations. Price: £2 2s.

"The purpose of this book is to gather together some of the widely scattered information relating to the development and welfare of children, and to provide the basis for further enquiry into the various subjects discussed."

"Chlorpromazine and Mental Health: Proceedings of the Symposium Held Under the Auspices of Smith, Kline and French Laboratories, June 6, 1955, Warwick Hotel, Philadelphia, Pennsylvania"; 1955. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 9" x 6", pp. 200, with illustrations. Price: £1 12s. 3d.

A series of papers with the ensuing discussions.

"Clinical Neurosurgery: Proceedings of the Congress of Neurological Surgeons, New York, N.Y., 1954"; 1955. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. Volume I. 9" x 6", pp. 183, with illustrations. Price: £3 14s. 3d.

A series of papers with the ensuing discussions.

"Hydrocortisone in Orthopaedic Medicine", by James Cyriax, M.D., M.R.C.P.; 1956. London: Cassell and Company. 8½" x 5½", pp. 37. Price: 5s.

Deals with the essentials of diagnosis and of injection technique for orthopaedic lesions suitable to be treated with hydrocortisone.

"Sick Children: Diagnosis and Treatment", by Donald Paterson, M.D. (Edin.), F.R.C.P. (Lond.), F.R.C.P. (Canada), revised by Reginald Lightwood, M.D. (Lond.), F.R.C.P. (Lond.), D.P.H. (Eng.), with the assistance of F. S. W. Brimblecombe, M.D. (Lond.), M.R.C.P. (Lond.), D.C.H.; Seventh Edition; 1955. London: Cassell and Company. 8½" x 6", pp. 603, with illustrations. Price: £2 2s.

A "radical revision" by a pupil and colleague of the original author.

"A.M.A. Scientific Exhibits, 1955", sponsored by Council on Scientific Assembly, American Medical Association; 1955. New York: Grune and Stratton. 11" x 8", pp. 808, with numerous illustrations. Price: \$20.00.

A compilation of visual material displayed in the Scientific Exhibits presented at the 1955 Annual Meeting of the American Medical Association.

"Cardiovascular Innervation", by G. A. G. Mitchell, O.B.E., T.D., M.B., Ch.M., D.Sc., with a foreword by Sir Geoffrey Jefferson, C.B.E., M.S., M.Ch., M.Sc., LL.D., F.R.C.P., F.R.C.S., F.R.C.S.I., F.R.F.P.S., F.A.C.S., F.R.S.; 1956. Edinburgh and London: E. and S. Livingstone, Limited. 9½" x 7", pp. 368, with many illustrations. Price: 55s.

The author has selected "relevant details from the extensive literature, confirming and augmenting them wherever possible by the results of his own investigations, reviewing and occasionally modifying existing hypotheses and blending all these disconnected observations and opinions into a connected picture".

"Outline of Orthopaedics", by John Crawford Adams, M.D. (London), F.R.C.S. (England); 1956. London: E. and S. Livingstone, Limited. 8½" x 5½", pp. 430, with illustrations. Price: £1 12s. 6d.

Intended primarily for students preparing for qualifying examinations and also for practitioners who occasionally encounter orthopaedic problems, for physiotherapists and for orthopaedic nurses.



## The Medical Journal of Australia

SATURDAY, MAY 5, 1956.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

### A CALL TO ARMS.

THE address of Dr. Edgar Thomson, incoming President of the New South Wales Branch of the British Medical Association for 1956, is published in this issue. It was, of course, intended primarily for the members of the New South Wales Branch, but it may be read with profit by every member of the Association in Australia. All that Dr. Thomson said about the Association is known, or should be known, by all Branch members. If a thing is known, however, its significance is not always widely appreciated; for this reason the address is most opportune. Dr. Thomson remarked that if he had had to choose a title he would have called his address "A Challenge". A challenge it is—the gauntlet has been flung into the arena, and it is for every member of the Association to take it up that he may extend his horizon of knowledge and maintain his standards of personal honour and ethical principles in the face of any who would seek to confine the one or debase the other. In other words this challenge is a call to arms.

Dr. Thomson has emphasized once again the two objectives of the British Medical Association and has insisted, as cannot be done too often, that the primary object is "the promotion of the medical and allied

sciences". After that comes the maintenance of the honour and interests of the medical profession by special methods which are named. Among the meanings given to the verb promote in The Concise Oxford Dictionary are "advance" and "help forward". Readers of this journal know perfectly well what is meant by these words. It may be said that Dr. Thomson speaks with the zeal of a scientific laboratory worker. He does; but this should not carry the implication that because he is not engaged in active clinical practice, he does not realize that laboratory discoveries and findings generally are of little use unless they are applied to the patient with the discriminating and scrupulous art of the practitioner at the bedside. Similarly no one in his right senses will suggest that the clinician does not know that a very great deal of what he does in treatment has had its origin in the laboratory. It must, of course, be confessed that when rule-of-thumb methods displace discrimination and attention to detail—as we all know may easily happen—the practice of medicine is debased and the patient may be in jeopardy. Here we may remark in passing that the rule-of-thumb therapist is one of those who fail "to promote the medical and allied sciences". Dr. Thomson has set out from the Memorandum of the New South Wales Branch the methods by which the objectives of the Association may be attained. In regard to attendances at Branch meetings it may be objected that with the Association and other medical bodies there are too many meetings, that to attend them all is impossible, that demands of patients preclude attendance, and that the claims of wife and family are not to be set on one side. The reply to such a sally is that there is no call for every practitioner to attend every meeting and that the other excuses put forward are valid if they are put forward with sincerity. It may be pointed out that when a matter of acute medico-political importance or of financial significance has to be decided the Branch meeting will be well attended. What is needed is a British Medical Association revival, not so much because freedom or security is threatened, but because the need for increase of knowledge and for its dissemination is realized.

When we turn to the "maintenance of the honour and interests of the medical profession", we find again a priority of objects. Honour comes first; interests follow. When we say that the Association is concerned to maintain the member's honour, obviously we mean his professional honour, and this must cover his relation to his patients and to his colleagues. It is hard to see how professional honour can be divorced from personal honour. A man either is honourable or he is not. Honour sits not on a man as a cloak, to be cast aside at will; it is part of his make-up. A man is known by his fruits; men do not "gather grapes of thorns or figs of thistles". There is unfortunately such a thing as mistaken honour, when action is based on premises not regarded as false. This sometimes happens between one member of the profession and another. If the disputants have the facility to see the other fellow's point of view there may be a happy outcome. If not, there is calamity, and long-lasting feuds are engendered. When such things happen in British Medical Association circles difficulty arises and the Association may be damaged—its honour besmirched. The honour of the profession in relation to bodies outside it has to be guarded with no less care, perhaps with greater care, than within its ranks. Here, of course, we have to consider corporate

action which can generally be decided upon after the careful weighing of evidence and intentions. We also have to consider the actions of the careless and of those who may be likened to "thorns" and "thistles". Sometimes, though rarely, the Association has had to crack the whip and do something about the recalcitrants of the Association.

Lastly we come to the "interests" of the profession. These interests are hard to define, but we can place them in national, political, economic and social spheres. It is not necessary at present to discuss these *seriatim*; but we may point to the Federal Council as concerned on the one hand with State Branches and on the other with State and Federal Governments and, further afield, with the World Medical Association and the World Health Organization. Perhaps we may sum up the subject by stating that if practitioners were all concerned with the growth of scientific medicine and its discriminating and careful application in the treatment of the patient, the efforts of the Association necessary to safeguard the "interests" of the profession would become much less than they are today.

Let us return to Dr. Edgar Thomson and what we described as his call to arms. The call is not to an individual setting out to practise medicine alone in more or less splendid isolation, which any graduate in medicine may do, but it goes to a graduate who has of his own volition and of his own initiative joined hands with his fellows as a member of an organization which has clearly defined objectives and obligations. It does not matter in these circumstances that these objectives and obligations are those which should activate every member of the profession whether he is a member of the Association or not; what is important is that once he has become a member a practitioner has adopted a standard of values which he is pledged to maintain. For this reason it is perhaps a pity that admission to membership of the British Medical Association is not marked by a formal ceremony, at which, presented by sponsors who have nominated him, a new member is called upon publicly to make affirmations and to express intentions based on the objectives of the Association. Such a ceremony would make an impression on a new member and be a continuing reminder of what he should do. More than this, it would cause older members present at an admission ceremony to look backwards and ask themselves how true they had been to their profession of faith. This kind of thing does happen. There must be few married men and women who, attending a wedding of younger friends, have not done some soul-searching when they have heard vows being made which they themselves had taken in all the confidence of youth some years earlier. It is, of course, true that many of the State Medical Boards hold a registration ceremony of sorts and that an address is given to the newly registered. This is what we may call a statutory ceremony, somewhat analogous to the university ceremony of graduation when qualifying degrees are conferred on successful students. What is suggested for the British Medical Association is a ceremony to mark the entrance of a graduate into a voluntary organization; it would be something comparable to the ceremony of the Royal Colleges when they admit newcomers to Membership or Fellowship. The Australian Branches of the British Medical Association might well consider this.

## Current Comment.

### EVALUATION OF POLIOMYELITIS VACCINATION.

THE imminence of vaccination of a susceptible population on a national scale against infection by the poliomyelitis viruses has drawn attention to the safeguards to be effected and to the mode of administration. Already it is said that 26,000,000 persons have received this vaccination in America and Europe, and in the present year this figure will be greatly increased. Reports from the United States of America have implied that the Salk vaccine is effective in the prevention of acute anterior poliomyelitis, but until recently there has been no report of the effectiveness of the vaccination during a virulent epidemic of the disease. Now such a report is at hand. The authors, A. S. Pope, R. F. Feemster, D. E. Rosengarde, F. R. B. Hopkins, B. Vanadzin and E. W. Pattison,<sup>1</sup> were specially commissioned to conduct the study by the Massachusetts Department of Public Health, under a grant from the National Foundation for Infantile Paralysis.

In 1955 the State of Massachusetts was a fertile ground for an epidemic of the disease. The last epidemic of poliomyelitis had occurred six years previously, and since that time the proportion of children in the population had increased. The epidemic began during July, 1955, in high summer in Boston, at a time when less than one-third of the susceptible population had been vaccinated against poliomyelitis. The peak of the outbreak occurred six weeks later, when a total of 3608 persons developed the disease. The epidemic proved a fruitful field of study, as the infection was almost wholly of the type I virus, and the usual confusing virus infections were of little account. The latter circumstance probably explains the low rate of less than 40% of non-paralytic cases throughout the whole epidemic. The percentage of cases in which there was bulbar involvement was 17.4; this is a high figure, and tends to emphasize the virulence of the outbreak. The epidemic was characterized by a rise in the proportion of infected persons below the age of five years; these accounted for 65% of the cases. Older children who had lived through previous epidemics proved to be generally resistant to the disease, and 8.6% of cases occurred in persons aged from twenty-five to twenty-nine years. Especially below the age of twenty years, there was the usual preponderance of males affected. Claims were made that the epidemic had originated in the live virus of the Salk vaccine; but in the opinion of Pope *et alii* this statement is without any convincing evidence. The epidemic started as a single focus in Boston, and spread out as a wave of infection, despite the fact that the same lot of vaccine had been used throughout the State. Also, of the first few cases only two occurred in recently vaccinated children, who did not develop paralysis in the inoculated arm. During 1954 about 14,000 children had been vaccinated, and the same number had received a placebo as a control. In 1955 no control inoculations were performed, and the control children of the previous year were vaccinated. In 1955, 137,892 children received one dose of vaccine, and 9156 received two doses of vaccine. When the epidemic became evident, laboratory investigations were begun of specimens of faeces and blood from infected patients for the presence of poliomyelitis virus. In each case an estimate of the muscular status was made and recorded in the period from fifty to seventy days after infection. Among children from the ages of six to ten years, 21 deaths were ascribed to poliomyelitis—that is, 3% of the entire infected group; one of these children had received one injection of Salk vaccine some weeks previously.

In Boston itself, among 144 vaccinated children exposed to a primary infection of poliomyelitis in the family, there were no secondary cases; of 889 unvaccinated children similarly exposed, 23 developed the disease. In the State of Massachusetts, out of 439,097 children between the ages

<sup>1</sup> *New England J. Med.*, January 19, 1956.



of six and ten years, 160,565 had received one or more doses of the vaccine. In the studied group of children aged from six to ten years, there were 698 cases of poliomyelitis. Of these, 130 occurred in children who had received one dose of vaccine, and 15 occurred in children who had received two or more doses. The attack rate per 100,000 was 94.5 for the singly vaccinated and 198.2 for the unvaccinated children. The attack rate for the children who received two or more doses was 66.4. The attack rates of non-paralytic poliomyelitis were not very different between the two groups, but the vaccinated children, even when infected, tended to be not so frequently paralysed as unvaccinated children. It was estimated that the effectiveness of the vaccine for all cases of poliomyelitis was 53%, and for the paralytic variety 60%.

The implications of this report are clear. The number of cases involved is sufficient for statistical accuracy, and the effectiveness of the Salk vaccine is left in no doubt. However, it is to be noted that vaccination does not give complete protection against the disease. Severe paralytic infections occurred even in children who had received proper doses of the vaccine. Salk vaccine is effective, and it now appears to be safe, but it only reduces the incidence of the disease. Nevertheless, until something better is developed, the protection offered by the Salk vaccine is well worth having.

#### HIRSCHSPRUNG'S DISEASE.

HIRSCHSPRUNG'S DISEASE was first described as a clinical entity by Hirschsprung in the year 1886. The inherent abnormality causes dilatation of the colon with severe chronic constipation dating from birth. The constipation may be alternated with days of offensive diarrhoea due to the putrefaction of massive intestinal contents. The clinical syndrome is well known, and it may be that mild manifestations of the disease with lifelong constipation and poor general health are fairly widespread in the community. In the more severe cases, toxic absorption of bowel contents results in the severe restraint of growth and physical vigour. Death in infancy, due to toxæmia and venous obstruction, occurs in about half of the patients who do not receive surgical treatment. It is important to recognize that the condition of idiopathic megacolon is a separate clinical entity whose treatment is based upon the diligent attention to regular bowel habits. Hirschsprung's disease is found most commonly in boys. M. Bodian, C. O. Carter and B. C. H. Ward<sup>1</sup> have demonstrated that the disease is genetic in character and that the chances of a male sibling being similarly affected are one in five. Investigation of the abnormality is not without danger, and the possibility of precipitating either intestinal obstruction or water intoxication after the introduction of barium for X-ray examination was pointed out by A. Jolleys.<sup>2</sup>

The failure of bowel action lies not in the dilated and hypertrophied colon, but in the immediately distal recto-sigmoid junction. This appears to be spastic and is unaffected by the waves of colonic peristalsis which normally drain waste products into the rectum. O. Swenson and A. H. Bill<sup>3</sup> first described the successful results obtained after resection of the rectum and recto-sigmoid junction in those children in whom the anal sphincter was preserved. Prior to this, numerous surgical techniques had been employed to alleviate the miserable condition of children with this disease. It was known that spinal anaesthesia would temporarily relieve the condition when it was due to the spasticity at the recto-sigmoid junction, and sympathectomy had been used as a form of treatment. Histological examination of the dilated bowel revealed no abnormality, and not until the work of M. Bodian, F. D. Stephens and B. C. H. Ward<sup>4</sup> was the

importance of the neuro-muscular failure recognized. These workers found that uniformly, throughout the entire narrow segment in all cases examined, there was complete absence of parasympathetic ganglion cells with some extension of this denervated area into the adjacent part of the dilated colon. Present in the abnormal portion of bowel were numerous bundles of sympathetic nerve fibrils. The basic cause of the disease was thus postulated as one of unopposed sympathetic spasm of the recto-sigmoid junction, and the sound basis for the surgical removal of this segment was confirmed. In their later paper Bodian *et alii*<sup>1</sup> reported on the follow-up results after 37 children with Hirschsprung's disease had been treated by recto-sigmoidectomy. Three deaths occurred during treatment. The remainder of the children were in good health, and half of them passed regular motions without the use of aperients. Most children after operation rapidly gained weight and reached normal average values. The surgical treatment of Hirschsprung's disease rapidly became a standard paediatric technique, and by 1954 T. H. Ehrenpreis<sup>5</sup> was able to state that there were already 300 reported cases of treatment by recto-sigmoidectomy, with a mortality rate of about 5%. He suggested that the operation should be performed after early infancy, if medical treatment would temporarily suffice. Only occasionally should a preliminary colostomy be performed. O. Swenson<sup>3</sup> described the failures of the pelvic parasympathetic system as being not confined to the recto-sigmoid junction, but as also being associated with megalo-ureter and megablabladder, either alone, or together with the longer recognized Hirschsprung's disease. The latest paper on this subject is that of H. H. Nixon.<sup>6</sup> This author reports, from experience with over 100 patients submitted to operation and subsequently reviewed, that the findings have been uniform. Parasympathetic ganglion cells have been completely absent from the distal part of the large bowel, and the lesion has always reached down to the anal canal. It has extended usually into a few inches of the sigmoid colon, but occasionally reached the ileum. The state of "colonic inertia", which is usually the result of a training error, is far more common, and in these patients the gaseous abdominal distension and the typically empty rectum of Hirschsprung's disease are not found. The true Hirschsprung's disease occurs about once in every 100,000 births, according to Nixon. Radiological confirmation of the disease is obtained by screening examination after the running of a small amount of barium solution through an enema tube just inside the anus of the child, whose colon has not been emptied. The Denis Browne technique<sup>7</sup> is employed, with preferably a synchronous, combined operation by two surgeons. Nixon suggests that the operation can be safely performed in the first few months of infancy. The aganglionic bowel is mobilized down to the anal canal and is aseptically intussuscepted until it reaches the anus as a complete prolapse. It is then cut off outside the peritoneum, and the sigmoid is anastomosed to the anal canal one centimetre from the ano-cutaneous junction. The surgical treatment of Hirschsprung's disease is difficult and can properly be undertaken only in specialized centres by those specially experienced. The importance of the condition lies in its early recognition and early treatment. From a child doomed to misery, pain, chronic sapping toxæmia and early death the surgeon creates, to all intents and purposes, a normal child.

#### ULTRASONICS IN MEDICINE.

Though the application of ultrasonic vibration to medicine and experimental biology is still in an early stage of development, enough has been achieved to indicate the existence of considerable promise for the future. Reports of the British Empire Cancer Campaign, reviewed

<sup>1</sup> *Lancet*, February 10, 1951.

<sup>2</sup> *Brit. M. J.*, March 29, 1952.

<sup>3</sup> *Surgery*, 24: 212, 1948.

<sup>4</sup> *Lancet*, January 1, 1949.

<sup>5</sup> *Lancet*, February 10, 1951.

<sup>6</sup> *Arch. Dis. Childhood*, February, 1955.

<sup>7</sup> *M. Press*, December 21, 1955.

<sup>8</sup> *Proc. Roy. Soc. Med.*, 42: 227, 1949.

in these columns, have included references to ultrasonic techniques. Four annual conferences under the auspices of the American Institute of Ultrasonics in Medicine have been held and the proceedings of the last two, that is, for 1954 and 1955, have recently been published.<sup>1</sup> Taking these two together, we find that 21 addresses have been delivered covering a wide field and all emanating from the United States except one from Auckland, New Zealand. The uses of ultrasonics in medicine can be briefly epitomized as follows: (i) Small highly discriminated lesions in the nervous system of an experimental animal can be produced at any depth and without injury to intervening tissues. The advantages of this over surgical ablation are obvious. (ii) Ultrasonic echoes can reveal soft tissue structures in the human patient which cannot be demonstrated by any ordinary diagnostic device. Thus a carcinoma the size of a pea can be detected in the breast though deeply seated. Also the method visualizes small adjacent anatomical structures like artery, vein and nerve. (iii) Connective tissue appears to be peculiarly sensitive to ultrasonic vibration and to undergo some obscure physical and chemical degenerative changes. Ultrasonic therapy has been successful in arthritis and in some cases of Dupuytren's contraction; also pain in amputation stumps. (iv) The same technique used in (i), that is, with carefully adjusted focusing, can be employed in attacking and destroying a malignant growth, provided other conditions are favourable. The authors agree that much research work remains to be carried out and much experience gained before ultrasonic methods can be admitted into routine diagnostic and therapeutic procedures.

#### MEDICAL EXAMINATION OF MOTOR-CAR DRIVERS.

THE large number of deaths and disabilities caused by road accidents is a growing concern to all countries of the world, and especially of countries with a high motor-car population ratio, such as Australia. In recent months there has been some talk of controlling physical fitness of motor-car drivers more rigidly, but as yet little has been done. At present drivers are in New South Wales required to answer a short medical questionnaire each year, and provided the answers reveal no abnormality, physical examination is not required. Visual acuity is tested only of new applicants for a licence, and colour vision and hearing are not checked at all. However, drivers over eighty years of age must undergo annual medical examinations, and diabetics are required to present medical certificates at certain time intervals, determined individually by the degree of stabilization and by the amount of insulin taken. Epileptics and individuals prone to loss of consciousness due to some other cause are unable to obtain a licence. Since April of this year drivers of commercial passenger-carrying vehicles must undergo regular medical check-ups, the interval decreasing as the applicant becomes older. Meanwhile thousands of private motorists and drivers of commercial vehicles carrying goods are given the freedom of the roads unchecked.

A. Grossjohann reports that a number of cities in the Federal German Republic<sup>2</sup> have set up special institutes where doctors and psychologists cooperate in developing methods for testing drivers. In these cities all drivers are examined by government physicians and psychologists, and when necessary by specialists. The physician takes a careful medical history and examines all systems, particularly visual and auditory acuity and colour vision. In the presence of any significant symptoms and signs the applicant is referred to the appropriate specialist. If his physical condition is satisfactory he is next interviewed by a psychologist, who tests his reaction time, his powers of concentration, his resistance to outside disturbances, and

his reaction to a sudden shock. The psychologist may further consult a psychiatrist for a thorough psychosomatic examination. If these tests reveal a defect the authorities may either refuse to grant the licence, or grant it subject to special conditions such as wearing artificial aids (for example, glasses or hearing aids), setting a special speed limit, or forbidding the applicant to drive after a certain hour. Such conditions are entered on the driver's licence. If some minor condition is found the applicant may be compelled to undergo a further examination at the end of a specified period. The main problem confronting the examiners is to determine what conditions render a person an unsafe driver. The Medico-psychological Institute in Stuttgart found that the most frequent medical causes of accidents are mental in origin, psychoses and personality defects ranking the highest, especially in the presence of organic cerebral disease such as senile decay. Extreme excitability and nervous exhaustion also make drivers unsound. Epilepsy is a frequent cause of accidents, and this includes many cases of "falling asleep at the wheel". In these latter cases subjects were frequently found to have an epileptiform type of electroencephalogram. Organic disease without mental disturbances was not found to be the cause of many accidents; for example, the author could trace only one accident to hypoglycaemic coma.

#### GLYCYRRHIZINIC ACID AND PITUITARY-ADRENAL FUNCTION IN MAN.

IN the "Current Comment" columns in this journal of August 15, 1953, attention was drawn to a series of papers dealing with the action of liquorice in causing retention of water, sodium and chloride and increased output of potassium in man. Some observers failed to note these effects. No pure preparation from liquorice was available until recently, and the variations in the findings of the different workers may have been due to varying amounts of a particular substance in different batches of extract of liquorice or of impure glycyrrhetic acid.

L. H. Louis and J. W. Conn<sup>3</sup> have described a simple way of isolating pure ammonium glycyrrhizinate and have studied its action in man. The substance has a chemical structure which could be derived from that of desoxycorticosterone. Three men and four women were studied as normal subjects together with two girls with congenital renal hyperplasia and one woman with Cushing's syndrome. On a fixed diet the subjects were given ammonium glycyrrhizinate orally four times daily, from four to six grammes per day for two to five days. In none of the subjects was any effect noticed on the protein or carbohydrate metabolism. In the normal subjects there was marked retention of sodium and chloride and a small increase in the excretion of potassium was noted. When the administration was stopped great loss of sodium and chloride occurred. The body weight, which had increased with the drug, did not return to normal for five to seven days after cessation of administration. The patient with Cushing's syndrome retained sodium and chloride and lost potassium. No effect was noticed in the two cases of adrenal hyperplasia. An interesting occurrence which has not been noticed before is the depression of excretion of 17-ketosteroids in the urine caused by the administration of the compound. In all the subjects but one, whose normal excretion of 17-ketosteroids was very small, there was a definite fall in the excretion of 17-ketosteroids. This was particularly marked in the cases of congenital adrenal hyperplasia with very high levels of ketosteroids in the urine. A patient with abnormally high levels of melanocyte-stimulating hormone in the urine was given 4.0 grammes per day of ammonium glycyrrhizinate. By the fourth day the urinary melanocyte-stimulating hormone had fallen to normal levels to rise again after the administration was stopped.

Glycyrrhizinic acid then induces great retention of water, sodium and chloride and mild increase in urinary

<sup>1</sup> Scientific Proceedings of the Third Annual Conference on Ultrasonic Therapy, Washington, D.C., September, 1954. The Fourth Annual Conference was held in Detroit, Michigan, August, 1955.

<sup>2</sup> Deutsche med. Wchnschr., September 30, 1955.

<sup>3</sup> J. Lab & Clin. Med., January, 1956.



potassium. It mildly inhibits endogenous production of ACTH as indicated by decreased excretion of 17-ketosteroids. It acts in the body very like an adrenal cortical steroid, but very much larger doses have to be given. Glycyrrhizinic acid is not likely to have any value in medical treatment, but large doses of extract of liquorice have been recommended for the treatment of peptic ulcers, and it is as well to realize the possibility that if the extract used is rich in glycyrrhizinic acid untoward results may occur.

#### THE MANAGEMENT OF SURGICAL LESIONS OF THE FEET IN DIABETICS.

AN important aspect of the management of diabetic patients has been emphasized by the Committee on Diabetes of the Massachusetts Medical Society<sup>1</sup> in presenting the result of a study of surgical lesions of diabetics' feet. The committee bases its opinion and comment upon a series of 502 such patients at various American hospitals. The view put forward is that earlier diagnosis of *diabetes mellitus* and earlier instruction of the elderly diabetic patient in the care of the feet are urgently needed. As the committee points out, apparently mild diabetes may be accompanied by progressive occlusive vascular disease in the older patient, and within a period of months or years the patient with so-called mild disease may suffer slight trauma only to have it followed by infection and gangrene. Of the patients in this series 50% were found to have evidence of peripheral arteriosclerosis to the extent that the *dorsalis pedis* arterial pulsations were absent. This sign indicates not only that the present condition is serious, but also that the present hospital experience will be followed by further stay in hospital in the next few years. A problem is still presented by the ignorance of many diabetics of both their diabetes and the nature of diabetic control, as well as of the importance not merely of the use of insulin, but also of frequent medical observation, and finally of the early care of mild lesions of the feet. The committee suggests the following five points of advice to be presented to all diabetic patients, especially those over forty years of age, and (for information) to their families: (i) do not walk on a sore foot; (ii) beware of the painless "diabetic foot"; (iii) use no heaters, drugs or chemicals without a doctor's order; (iv) remember that procrastination steals the diabetic leg; (v) control the diabetes with diet and insulin. The treatment of foot lesions on an ambulatory basis was continued for too long in the group under discussion, and it is apparent that unwarranted faith in the use of either antibiotics or anti-septics, in the face of serious deficiency in the blood supply, is a major hazard. This type of management should be discontinued in the presence of active or extending infection, ulcerations on weight-bearing points, ulcerations over points that may extend into joints, infected corns or calluses that are deep, and any infection in a foot in which there is arteriosclerotic deficiency of the blood supply.

#### HISTAMINE IN THE TREATMENT OF RHEUMATIC DISEASE.

IN the "Current Comment" columns in this journal for July 24, 1954, an assessment of the possible uses of histamine in the body was presented. No very satisfactory conclusions could be given. It is known that histamine is produced in the skin and other tissues as a result of stimuli of various kinds, such as bee stings and other injuries, and leads, in the skin, to the triple response—local redness, weal and surrounding flare. The general reactions caused by histamine are varied. One of these is an eosinopenia which resembles that produced by cortisone or

ACTH. The amelioration in the rheumatic conditions brought about by these hormones follow the fall in the number of eosinophile cells in the blood. Histamine, introduced into the skin by iontophoresis, has been used for some years in the treatment of arthritis, bursitis and fibrositis and good results have been reported by some investigators.

I. B. Pearlstein<sup>1</sup> has treated 150 patients suffering from rheumatic complaints with intracutaneous injections of histamine and procaine in solution containing 1.25 milligrammes of histamine base and 50 milligrammes of procaine by volume per cubic centimetre. The initial dose of this solution was 0.15 millilitre injected intracutaneously over the affected joint or other part. Patients with severe incapacitating pain (due, for example, to bursitis or tendinitis) received daily injections until distinct relief was obtained, usually in three to five days. Sometimes relief was obtained after a single injection. The dose was increased daily by 0.05 millilitre until a satisfactory response was noted. Treatment was then continued at this dosage three times a week as long as continued improvement was seen. An average maximal dose of 1.0 millilitre was given. The response was characterized by a moderate, generalized flush over the face and neck gradually spreading to the rest of the body and usually accompanied by tachycardia and headache. Sleep generally followed and on waking the patient had a feeling of well-being. The best results were obtained in the group of patients with non-articular rheumatic disorders, tendinitis, tenosynovitis, bursitis and capsulitis. Patients suffering from osteoarthritis mostly responded well to this form of therapy, but the few patients suffering from atrophic arthritis did not respond.

Histamine exerts a profound local effect when injected intracutaneously over a hot, painful joint. There is generally a rapid diminution of redness, heat, pain and swelling. The local relief of pain is dramatic, beginning with the first injection and lasting twelve hours or longer. Some patients have been treated with what is called a repository type of histamine in the form of histamine diphosphate in oxycholesterol derivatives dissolved in peanut oil ("Histappon"). Good results were obtained with this, without strong histamine reactions, particularly in elderly people. In a follow-up study on the first 42 patients, 39 replied and none of them had had any treatment for nine months. The patients had all maintained their improvement. The results obtained resemble in many respects, in terms of symptomatic response, those which may follow treatment with cortisone or ACTH, or both, except for the absence of the side effects common during administration of the hormones.

#### THE GERMAN MEDICAL JOURNAL: GERMAN MEDICINE IN ENGLISH.

MEDICAL PRACTITIONERS who can read scientific German with facility are comparatively few in number. This has been a disadvantage and has deprived many men of a useful source of information. For this reason we welcome the publication of the *German Medical Journal*. This journal will appear every month, and it comprises chiefly English translations of selected articles from the *Deutsche medizinische Wochenschrift*. The first number of volume one is dated January, 1956. It is hoped that in the future articles from other sources will be accepted also. The point is that this journal will bring to English readers reliable translations of important German medical contributions. The chairman of the Board of Editorial Consultants is Dr. L. Heilmeyer, of Freiburg. Dr. Heilmeyer explains in a short foreword that in addition to the type of articles already mentioned, the journal will contain reviews, abstracts and notices of German medical happenings. The editor for the English language edition is G. R. Graham, of London. All inquiries about this new journal should be direct to the Editor, F.O.B. 732, Stuttgart, Germany.

<sup>1</sup> *New England J. Med.*, October 20, 1955.

<sup>1</sup> *J. Am. Geriatrics Soc.*, December, 1955.



## Abstracts from Medical Literature.

### SURGERY.

#### Lymphangiosarcoma After Radical Mastectomy.

J. MARSHALL (*Ann. Surg.*, November, 1955) states that the usual sequence of events in lymphangiosarcoma of the arm following radical mastectomy, first described only as recently as 1948, is the development of oedema of the arm after the operation. This is later followed, usually in a period of years, by purplish-red or cyanotic lesions in the swollen arm. These are lymphangiosarcomata. These lesions apparently grow from multicentric origins, and the prognosis is poor. The best treatment is an inter-scapulo-thoracic amputation.

#### Choledcho-Duodenostomy in Cholangio-Hepatitis.

F. STOCK AND L. TINCKLER (*Surg., Gynec. & Obst.*, November, 1955) discuss cholangio-hepatitis, which is a pyogenic infective condition of the biliary tract, frequently encountered in south-east Asia and peculiarly associated with the Chinese race. They state that liver-fluke infestation and pyogenic infection followed by obstruction of the bile ducts, either by spasm or by inflammation of the ampulla of Vater, or by impaction of biliary calculi, are the sequence of development of the syndrome. Choledcho-duodenostomy is followed by better results than those obtained by T-tube drainage of the common bile duct.

#### Metastatic Cancer of the Liver.

G. PACK AND R. BRASFIELD (*Am. J. Surg.*, November, 1955) discuss the problem of metastatic cancer of the liver. They describe a series of cases in which metastasectomy or partial hepatectomy was successfully performed with definite palliative improvement in the patient's condition.

#### Bacteriological Study of Portal-Vein Blood.

W. SCHATTEN, J. DESPREZ AND W. HOLDEN (*Arch. Surg.*, September, 1955) have shown that there is a continual passage of bacteria, especially Gram-positive cocci, from the alimentary canal to the liver via the portal vein. As a consequence, they state that this furnishes a rationale for sterilizing the intestines in those patients in whom there is a deficiency of liver function.

#### Peripheral Vascular Disease in Diabetics.

R. BERRY AND C. FLOTTE (*Arch. Surg.*, September, 1955) have studied the results of lumbar sympathectomy performed in 93 diabetic patients with peripheral vascular disease. They have compared the results with those obtained from 182 non-diabetic patients with similar vascular disease and in whom the same operation was carried out. The authors concluded that in the absence of ulceration or gangrene, results in the

non-diabetic patients were somewhat better than those in the diabetic patients. However, once necrosis had occurred, the results were the same. They found that the results of lumbar sympathectomy in diabetics over sixty-five years of age who were also suffering from hypertension, central nervous or cardiac involvement, were so poor as to contraindicate the operation. They concluded that severity, duration or efficiency of control of the diabetic state little affected the proportion of good results obtained. However, the amputation rate was higher in poorly treated or short-term diabetics.

#### Intestinal Obstruction Caused by Adhesions.

J. PERRY, G. SMITH, AND E. YONEHIRO (*Ann. Surg.*, November, 1955) suggest that adhesions have now replaced external herniae as the prime cause of intestinal obstruction, being three times as numerous in their series of 1252 cases of intestinal obstruction met with at the University of Minnesota Hospitals. In this series, 31% of obstructions were found to be caused by post-operative, inflammatory, or congenital adhesions; only 10.2% were due to external hernia. This is probably because of the greater number of abdominal operations being performed and also because of the earlier repair of herniae. Of the adhesions, the post-operative were by far the most common.

#### Sarcoma of the Stomach.

S. OCHSNER AND A. OSCHNER (*Ann. Surg.*, November, 1955), in reviewing 298 cases of gastric malignant disease, found 17 (5.7%) to be sarcomata. They point out that most gastric sarcomata are of two types, the leiomyosarcomata and the lymphomata, which latter group includes the reticulum cell sarcomata, lymphosarcomata and Hodgkin's disease. Clinically the symptoms of these lesions are non-specific, and the best method of diagnosis is by radiological examination. Treatment must be radical, and the lymphomata should receive post-operative irradiation. Irradiation also benefits those patients with inoperable sarcomata. Patients suffering from leiomyosarcoma appear to have a better prognosis than those suffering from a lymphoma.

#### Mechanism of Brain Concussion, Contusion, and Laceration.

E. S. GURDJIAN, J. E. WEBSTER AND H. R. LISSNER (*Surg., Gynec. & Obst.*, December, 1955) discuss the mechanics of head injury by experimental and clinical observation under the basic effects of acceleration, deceleration and compression. They conclude that cerebral concussion is an acute post-traumatic state associated with unconsciousness, pallor and a shock-like state and that it is the result of derangement in function of the brain stem. The brain stem involvement may be of varying degree and may result in either reversible or irreversible damage. The reversible state may lead to complete recovery; the irreversible to unconsciousness with ultimate death. Concussion may be associated with brain contusions and lacerations or it may be unaccompanied by macroscopic evidences of injury to the

neural tissue. Contusions and lacerations of the brain may not be accompanied by concussion. Concussion occurs as a result of brain stem injury from increased intracranial pressure at the time of the impact, from direct injury by distortion, from mass movement, from shearing or from destruction by a missile. The terms cerebral concussion, contusion and laceration should not be used to denote varying degrees of nervous system damage, with concussion identified as representing the mildest form. The evidence indicates that concussion is due to an involvement of a specific area in the brain, namely, the brain stem. A contusion or laceration in this area may be fatal. However, contusions and lacerations in other portions of the nervous system may be present with no associated concussive effect if the brain stem area is not sufficiently involved.

#### Segmental Spasm of the Brachial Artery.

J. KULOWSKI (*Surgery*, December, 1955) states that the mechanical causes of circulatory disturbances, associated with supracondylar fracture of the humerus in children, are well known. Not so well known, perhaps, is the entity called by various names, but best described clinically as reflex segmental arterial spasm. An eight years old girl suffered a compound supracondylar fracture. The deformity usually associated was present, together with a contused puncture wound in the middle of the antecubital fossa, through which the jagged end of the lower part of the humerus protruded. There was a complete loss of the radial pulse at the wrist, with moderate coldness and slight swelling of the fingers and hand. Four hours after injury, open reduction was accomplished without difficulty, but the radial artery failed to resume pulsation. The wound was enlarged to afford exposure of the brachial artery and the median nerve. The veins and the nerve were normal, but the artery was attenuated, string-like and pulseless. Three cubic centimetres of a 1% solution of procaine were injected under the nerve sheath with a fine needle. In a few moments, the brachial artery began to pulsate feebly. A further injection was made, and the pulsation increased in volume and the pulse at the wrist could be felt. The immediate and subsequent recovery was uneventful. The condition was thought to be due to reflex sympathetic activity, and it is suggested that this reflex was broken by procaine injected into the median nerve.

#### Surgical Management of Diverticulitis.

H. E. BACON AND M. A. VALIENTE (*Am. J. Surg.*, February, 1956) point out that reevaluation of the surgical management of colonic diverticulitis indicates the value of preventive resection of the diseased area in preference to waiting until a serious complication appears. This policy is able to be carried out nowadays in view of the safety of colonic surgery due to the antibiotics, and improved measures in nutrition and electrolyte replacement. However, special problems still exist, as sometimes the first indication of diverticulitis is the

development of a surgical complication. Acute or sudden perforation of the colon can usually be managed by repair of the site of rupture, with or without transverse colostomy. However, if the bowel wall is friable, local repair is not performed, but the segment of bowel is exteriorized if it can be mobilized. If this cannot be done, then the site of rupture is drained and a transverse colostomy performed. The authors then inject a solution of neomycin (five grammes in 500 millilitres of sterile water) into the bowel lumen, and this is flushed through the colon. Later resection of the affected portion of bowel is performed. Fistulae are treated by resection of the diseased part of the bowel and removal of the fistulous tract with repair of the involved viscus. This may need to be staged if the bowel is inflamed. Strictures are treated by resection, care being taken to see if a carcinoma is also present. Haemorrhage, if uncontrollable by conservative measures, may require resection of the diseased part of the bowel. The authors base their statements on a series of 73 resections accompanied by the low mortality rate of 2.2%. Included in this series are eleven partial cystectomies with no deaths. The authors state that a liberal section of bowel must be removed, and they now perform left hemicolectomy with anastomosis of the distal part of the transverse colon to the lower part of the sigmoid or recto-sigmoid.

#### Starch Powder Granuloma.

H. SNEERSON AND Z. WOO (*Ann. Surg.*, December, 1955) report two proven cases of starch granuloma occurring at their hospital and following operations, and mention two others from a hospital close by. As a consequence, they suggest that these lesions may be not uncommon following operative procedures. They point out that extreme care should be taken in washing all starch powder from gloves, rubber tubes and drains before using them in any operation. All granulomata should be examined by the starch test and by polarized light in order to diagnose starch powder granuloma.

#### Treatment of Genito-Urinary Tuberculosis by Drugs.

A. L. DEAN (*J. Urol.*, March, 1955) reviews the treatment of genito-urinary tuberculosis by drugs. This important work has been under the urological care of J. K. Lattimer at the Veterans Administration Hospital, Bronx, New York, since the end of 1946. The original method of treatment was by streptomycin alone. The dosage was 1.8 grammes daily for one hundred and twenty days, and the results were good. There was a 62% apparent cure rate at the end of one year. However, all these patients suffered from permanent loss of vestibular function, and an increasing bacterial resistance to the drug developed. A great improvement was that of the introduction of para-aminosalicylic acid (PAS), which permitted the dosage of streptomycin to be reduced to one gramme twice weekly. The dose of PAS was three grammes, every six hours, by mouth. This combined treatment, continued without interruption

for one year, gave improved therapeutic results, with no serious complication. Subsequent relapse was most likely in those patients whose lesions produced radiologically visible deformities of the renal pelvis or calyces. When a relapse occurred, resumption of treatment for another year was indicated. When the lesions are necrotic fibro-caseous in nature, the only proven cure is by surgical excision. Even in such cases, operation should be preceded by one year of the combined therapy, and there should be post-operative drug treatment for six months. Iso-nicotinic acid hydrazide ("Isoniazid"), a drug similar in its action to streptomycin, may produce severe complications; but since it has great clinical promise, it has been added to the present treatment plan. This consists of one year of streptomycin one gramme twice weekly, PAS five grammes eight-hourly, and "Isoniazid" 100 milligrammes eight-hourly. Although all 20 patients who have received this latest course have responded promptly and favourably, insufficient time has elapsed since the end of treatment to measure the result accurately. The benefit of these drugs has been derived without demonstrable injury to renal function.

#### Acute Traumatic Renal Insufficiency.

C. E. CATLOW (*J. Urol.*, June, 1955) states that the syndrome of acute traumatic renal insufficiency may be caused by prolonged shock, trauma, haemoglobinæmia, toxins (either bacterial or chemical), sensitization reactions, radiation or anoxæmia. Whatever the cause, the pathological findings and the clinical course are essentially the same. There is necrosis of the nephron, with the greatest changes in the tubular system. There is precipitation of myohæmoglobin, hæmoglobin and other proteins within the tubules, with resultant blockage of the lumen. The oliguric phase lasts about ten days, and the secondary diuretic phase lasts for several weeks. During the oliguric period there occur the profound metabolic changes involving the elimination of non-protein nitrogen, acidosis, hyperphosphatæmia and reciprocal hypocalcæmia, accumulation of toxic metabolites and, most important, hyperkalemia. The last may have dire effects; the sources of the increased potassium are from tissue breakdown of extensive wounds and infections, catabolic mechanisms incident to diminished caloric intake, and acidosis, with the resulting ionic shift of potassium from the cells to the extracellular fluid. The diuretic phase is marked by electrolyte depletion, so that continued medical vigilance is necessary. The concentration of non-protein nitrogen remains high for a long time after diuresis begins. Such changes are doubtless due to faulty mechanisms of absorption in the regenerating epithelium. If death occurs, and if it is not due to wounds or to severe infections, it usually comes either from pulmonary oedema due to over-hydration, or from cardiac arrest secondary to hyperkalemia. Principles of treatment are: the regulation of fluid intake so as not to overwhelm the patient with fluid that cannot be excreted; the regulation of acid-base balance; the maintenance

of caloric intake; the administration of small, frequent blood transfusions to control anæmia and restore depleted proteins; the administration of antibiotics and vitamins; dialysis by the artificial kidney in severe cases; the control of hyperkalemia with emphasis on the use of such substances as sodium which are electrolyte antagonists to potassium. It is suggested that, during the first critical hours after an injury, the addition of an osmotic diuretic such as sorbitol or mannitol to the blood transfusion may prevent mechanical blockage of the tubules by the precipitated proteins.

#### "Efocaine."

P. E. JURGENS (*Anesthesiology*, July, 1955) used several species of animals to determine the effects on the tissues of "Efocaine" and its constituents which are procaine base, procaine hydrochloride, butyl-p-aminobenzoate, propylene glycol and polyethylene glycol. Widespread severe necrosis occurred with use of "Efocaine", propylene glycol and polyethylene glycol. "Efocaine" was the most severely damaging in all the tissues injected. These results indicated that its use should be discontinued in human subjects.

#### Urinary Excretion of "Arfonad".

GERTENER *et alii* (*Anesthesiology*, July, 1955) used seven patients undergoing controlled hypotension during surgery to estimate the urinary excretion of "Arfonad". Approximately 31% of the total dose was recovered in its biologically active form in the first three post-operative hours. No further "Arfonad" was detected in the next twenty-four hours; this leaves 69% unaccounted for. Animal experiments indicated that neither kidneys nor the liver play a major part in the destruction of this unexcreted "Arfonad", which must be rendered inactive by some other means.

#### MEDICINE.

##### Agammaglobulinæmia.

T. H. BREM AND M. E. MORTON (*Ann. Int. Med.*, September, 1955) report seven cases of agammaglobulinæmia, all of which were in males. In three, lymphadenopathy and splenomegaly were prominent, and the diagnosis of giant follicular lymphoma was considered to be most likely. Autopsy in one, and subsequent study in the other two, which were also associated with advanced hepatic cirrhosis, did not confirm this impression. All three of these patients were particularly susceptible to infection; in each there was absence of  $\gamma$  globulin and hæmagglutinins. Two patients without a history of repeated infections also had no  $\gamma$  globulin, but did possess isohæmagglutinins and were able to produce antibodies to some extent. The remaining two cases were in brothers with long histories of infection who died of chronic lymphatic leucæmia. Their serum contained no  $\gamma$  globulin. The occurrence of this anomaly in siblings, reported here for the first time, lends support to the hypothesis that it is genetically determined.



## British Medical Association News.

### ANNUAL MEETING.

THE annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, on March 22, 1956, Dr. H. H. Willis, the President, in the chair.

### ANNUAL REPORT OF COUNCIL.

The annual report of the Council was received on the motion of Dr. H. R. R. Grieve, seconded by Dr. R. H. Macdonald. After the report had been shortly commented on by the President and others, it was adopted on the motion of Dr. H. R. R. Grieve, seconded by Dr. R. H. Macdonald.

A motion of appreciation of the work of the Ladies' Committee of the Ninth Session of the Australasian Medical Congress (British Medical Association), under the presidency of Lady Collins, was passed on the motion of Dr. E. S. Stuckey, seconded by Dr. K. S. Jones.

The members of the meeting stood in silence as a token of respect to the memory of the late Sir Archibald Collins.

The annual report is as follows:

The Council presents the following report on the work of the Branch for the year ended March 22, 1956.

### Membership.

The membership of the Branch is now 3905, as against 3804 at the date of the last report. The additions have included 161 elections, re-elections and resumptions, and 112 removals into the area of the Branch; while the losses have included 13 by resignation, 93 removals out of the area of the Branch, 30 by default in payment of subscription, and 36 by death. The losses by death were as follows: Dr. H. A. Annetts, Dr. L. E. Ellis, Dr. W. C. Sawers, D.S.O., Dr. J. F. Collins, Dr. N. Pern, Dr. J. M. Byrne, Dr. N. E. Davis, Dr. E. M. McCaffrey, Dr. D. S. Garton, Dr. G. F. Hill, Sir Archibald Collins, D.S.O., M.C., Dr. P. H. Stanley, Dr. F. W. Budder, Dr. F. J. Jensen, Dr. K. C. Faulder, Dr. G. A. Brookes, Dr. W. A. Meldrum, Dr. C. R. Palmer, Dr. J. A. Lawson, Dr. R. B. Minnett, Dr. Marie M. Hamilton, Dr. J. W. S. Laidley, Dr. J. J. Witton Flynn, M.C., O.St.J., Dr. H. J. Kenny, Dr. C. M. O'Halloran, Dr. J. Goldman, Dr. W. W. Rail, Dr. H. S. Kirkland, Dr. M. Steel, Dr. R. Grosslicht, Dr. W. B. Walton, Dr. H. M. Taylor, Dr. O. Barton, Dr. M. L. Coutts, Dr. C. H. Northcott.

### Obituary: Archibald John Collins.

In the death of Sir Archibald Collins, Kt., D.S.O., M.C., the profession, not only in New South Wales, but throughout Australia, has suffered a great loss.

A member of Council from 1930 till his death on June 24, 1955, he was elected President of the Branch in 1934 and Vice-President in 1948. In 1937 he was appointed Honorary Secretary of the Branch, a position he retained until 1948.

He was a representative of the Branch on the Federal Council in 1937 and from 1945 till his death. In 1951 he was elected its President. He represented the Federal Council at the inaugural meeting of the British Commonwealth Medical Conference in London in 1948 and at the second annual meeting of the World Medical Association in the same year.

At the beginning of 1955 Her Majesty the Queen was pleased to create him a Knight Bachelor for "significant service as a leader of the profession".

The profession in Australia will always remember with gratitude his leadership and the statesmanlike skill which he exercised in negotiations with the Commonwealth Government in connexion with the National Health Services.

The deep sympathy of the Branch is extended to Lady Collins and family.

### Gold Medal of the British Medical Association in Australia.

On March 1, 1956, at its meeting held in Hobart, the Federal Council of the British Medical Association in Australia resolved as follows:

The Federal Council of the British Medical Association in Australia has today awarded the Gold Medal of the British Medical Association in Australia

to Dr. John George Hunter for long and distinguished service to the British Medical Association and to members of the medical profession throughout Australia.

The Gold Medal is the highest award that the Federal Council of the British Medical Association in Australia can confer upon a member.

There have been six previous recipients of the award, of whom the only one living is Sir Henry Simpson Newland.

### Congratulations.

Congratulations were extended to Dr. C. G. McDonald on the honour of Commander of the Most Excellent Order of the British Empire conferred on him by Her Majesty the Queen.

### Meetings.

Nine ordinary general meetings of the Branch (including the annual general meeting), one extraordinary general meeting of the Branch, and nine clinical meetings were held. The average attendance was 74.

Seven ordinary general meetings were held in conjunction with meetings of the special groups, namely: April 28, with the Section of Medicine, the Section of Surgery and the Section of Radiology; May 26, with the Section of Obstetrics and Gynaecology and the Section of Urology; June 30, with the Section of Surgery, the Section of Medicine and the Section of Anaesthesia; July 28, with the Section of Surgery, the Section of Radiology and the Section of Medicine; September 29, with the Section of Neurology, Psychiatry and Neurosurgery and the Section of Paediatrics; November 24, with the Section of Medicine, the Section of Pathology and the Section of Surgery; December 8, with the Section of Neurology, Psychiatry and Neurosurgery and the Section of Medicine. Sixteen papers were presented at these meetings.

The clinical meetings were held at the Rachel Forster Hospital for Women and Children, Royal North Shore Hospital, Royal Prince Alfred Hospital, Royal Alexandra Hospital for Children, Saint Vincent's Hospital, Sydney Hospital, The Women's Hospital, Crown Street, Saint George Hospital, and the Repatriation General Hospital, Concord.

At the ordinary general meeting on December 8 the College of General Practitioners took part.

By-law 4 and By-law 30 were amended at the extraordinary general meeting on November 24. The amendment to By-law 4 provided that a member who is a whole-time member of the Public Service of the Commonwealth of Australia or of the State of New South Wales, or who is a whole-time member of the staff of a public hospital, or who is engaged in practice solely as an employee of any authority, corporation, company, association or body, but who has the right of private practice and exercises that right, shall pay an annual subscription of nine pounds nine shillings. By the amendment of By-law 30 provision was made for the New South Wales Branch to elect three representatives in the Representative Body of the British Medical Association.

Wagga Wagga was selected as the site for the holding of the fourth meeting of the Branch to be held in a country town. It was held on Saturday and Sunday, October 29 and 30. Twenty-eight members attended and two papers were read. In addition to a scientific programme, social functions were arranged by the Southern District Medical Association. The Council extends its grateful thanks to the Southern District Medical Association for its assistance in the organization of the meeting.

An invitation was extended to the fifth and sixth year medical students of the University of Sydney to attend ordinary general meetings, and to sixth year medical students to attend clinical meetings of the Branch.

### Representatives.

The Branch was represented as follows:

1. Council of the British Medical Association (1955-1958): Dr. Isaac Jones.
2. Annual Representative Meeting, British Medical Association, London, June, 1955: Representatives, Dr. J. C. Loxton and Dr. G. N. Young.
3. Federal Council of the British Medical Association in Australia: Dr. R. H. Macdonald, O.B.E., Dr. A. J. Murray, O.B.E., Dr. W. F. Simmons, Dr. H. R. R. Grieve.
4. Australasian Medical Publishing Company Limited: Dr. W. F. Simmons, Dr. W. L. Calov, Professor L. F. Dods, M.V.O.
5. New South Wales Post-Graduate Committee in Medicine: Dr. A. C. Thomas, Dr. E. F. Thomson, Dr. S. R. Dawes.

6. The Ophthalmic Association Limited: Dr. E. V. Waddy Pockley.
7. The Flying Doctor Service of Australia: Dr. George Bell, O.B.E.; Deputy Representative, Dr. J. G. Hunter.
8. Council of the Bush Nursing Association: Dr. H. H. Willis.
9. Hospitals Contribution Fund of New South Wales: Dr. Hugh Hunter.
10. St. John Ambulance Association: Dr. H. H. Willis.
11. Standards Association of Australia: (i) Institutional Supplies Committee, Dr. S. W. G. Ratcliff; (ii) Sectional Committee on Interior Illumination of Buildings, Dr. J. Davis; (iii) Committee of Standards of Laboratory Glassware and Volumetric Glassware, Dr. F. S. Hansman; (iv) New South Wales Committee on Protective Occupational Clothing, Dr. J. H. Blakemore; (v) Paint and Varnish Sub-Committee No. 8, Dr. J. H. Blakemore; (vi) New South Wales Committee on Eye Protection, Dr. J. Davis; (vii) Sectional Committee on Measuring Cups and Spoons, Dr. W. W. Ingram; (viii) New South Wales Committee on Industrial Respiratory Protective Devices, Dr. W. E. George.
12. Medical Officers' Relief Fund (Federal): Local Committee of Management for New South Wales, Dr. A. M. McIntosh, Dr. A. J. Murray, O.B.E., Dr. R. H. Macdonald, O.B.E.
13. Medical Appointments Advisory Committee (Hospitals Commission of New South Wales), Dr. B. T. Edye.
14. Special Departmental Committee for the Investigation of Maternal Deaths: Dr. E. A. Tivey; Alternate Representative, Dr. M. H. Elliot-Smith.
15. Recreation and Leadership Movement: Professor Harvey Sutton.
16. Council of the New South Wales Institute of Hospital Almoners: Dr. R. A. R. Green.
17. New South Wales Medical Board: Dr. J. R. Ryan.
18. New South Wales Examining Council for Medical Technology (Hospitals Commission of New South Wales): Dr. E. F. Thomson, Dr. F. S. Hansman.
19. Medical Finance Limited, Board of Directors: Dr. E. A. Tivey, Dr. A. C. Thomas, Dr. George Bell, O.B.E., Dr. G. C. Halliday.
20. Council of the New South Wales Institute of Dietitians: Dr. K. S. Harrison.
21. Coordinating Council of the Physically Handicapped: Dr. R. A. R. Green.
22. Road Safety Council of New South Wales: Dr. H. H. Willis.
23. Road Safety Council of New South Wales (i) Committed to examine and report on matters dealing with road accidents involving motor cycles: Dr. I. D. Miller.
24. Federal Medical War Relief Fund, Local Committee of Management: Dr. R. H. Macdonald, O.B.E., Dr. A. C. Thomas, Dr. A. J. Murray, O.B.E.
25. Florence Nightingale Memorial Committee of Australia: Dr. B. T. Edye.
26. National Association for the Prevention of Tuberculosis in Australia (New South Wales Division): Dr. W. Cotter B. Harvey.
27. Committee for Placement of Resident Medical Officers: Dr. A. M. McIntosh.
28. Australian Physiotherapy Association: Dr. B. G. Wade.
29. New South Wales State Cancer Council: Dr. B. T. Edye.
30. Department of Motor Transport (Committee to consider the question of the adoption of chemical tests of body fluids to determine whether a driver is under the influence of alcohol): Dr. F. S. Hansman.
31. Medico-Pharmaceutical Liaison Committee: Dr. J. K. Maddox, Dr. G. L. Howe, Dr. W. F. Simmons, Dr. J. G. Hunter.
32. Department of Public Health, Poisons Advisory Committee: Dr. A. W. Morrow, D.S.O.
33. National Health Service, Pensioner Medical Service, Committee of Inquiry: Dr. M. S. Alexander, O.B.E., Dr. B. A. Cook, Dr. A. W. Morrow, D.S.O., Dr. A. C. Thomas.
34. State Medical Advisory Committee: Dr. E. F. Thomson, Alternate Representative: Dr. J. G. Hunter.
35. Fluoridation of Drinking Water, Department of Public Health Advisory Committee: Dr. D. G. Hamilton.
36. New South Wales Association of Medical Records Librarians Advisory Committee: Dr. T. Y. Nelson.
37. Board of Optometrical Registration: Dr. J. Davis.

#### Council.

(a) The attendance of members of the Council and of the standing committees was as set out in the accompanying table.

(b) The representatives of the Local Associations of members appointed on the invitation of the Council to attend the regular quarterly meetings of the Council were as follows: Dr. W. T. Lesslie (Blue Mountains), Dr. M. M. Ramsden (Border), Dr. J. Adrian Paul (Brisbane Water District), Dr. L. Abramovich (Canterbury-Bankstown), Dr.

ATTENDANCE AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.				
		Executive and Finance.	Organization and Science.	Medical Politics.	Hospitals.	Ethics.
ALEXANDER, M. S. . . . .	17	—	—	11	—	—
BELL, GEORGE. Honorary Treasurer . . . . .	15	13	1	3	3	2
BLACKBURN, SIR CHARLES . . . . .	12	—	—	—	—	2
COLLINS, SIR ARTHUR. Vice-President . . . . .	—	—	—	—	—	—
COOK, B. A. . . . .	12	—	—	—	4	—
EDYE, B. T. . . . .	15	—	—	—	—	2
GRIEVE, H. R. B. Honorary Secretary . . . . .	16	12	1	3	0	1
HALLIDAY, G. C. . . . .	14	—	—	—	—	2
HILLIARD, E. T. . . . .	2	—	1	8	—	—
HOWE, G. L. . . . .	17	13	—	—	—	—
JOHNSON, A. S. . . . .	14	15	5	—	—	—
JONES, K. S. . . . .	16	—	—	11	—	—
LAVERTY, C. E. M. . . . .	17	—	—	9	4	—
LYTLE, J. P. . . . .	9	—	—	8	—	—
MACDONALD, R. H. . . . .	17	12	—	—	—	2
MORROW, A. W. . . . .	11	—	4	—	4	—
MURRAY, A. J. . . . .	16	13	—	—	—	—
NELSON, T. Y. Past President . . . . .	17	15	—	—	4	—
PUCKEY, MARY C. . . . .	10	—	—	—	—	—
RAWLIE, K. C. T. . . . .	10	—	—	—	1	—
SEMONS, W. F. . . . .	17	15	—	11	—	—
STUCKEY, E. S. . . . .	13	—	—	10	—	—
THOMSON, E. F. President Elect . . . . .	12	6	5	4	1	1
TURNBULL, H. I. . . . .	13	—	—	—	3	—
WILLIS, H. H. President . . . . .	17	15	3	11	4	2
Meetings held . . . . .	17	15	5	11	4	2

<sup>1</sup> Deceased June 24, 1955.

<sup>2</sup> Leave of absence, July to September, 1955; October to December 1955.



B. W. Monahan (Central Southern), Dr. G. N. M. Aitkens (Central Western), Dr. A. McNeill (Eastern District), Dr. P. D. Hipsley (Eastern Suburbs), Dr. R. F. K. West (Far South Coast and Tablelands), Dr. L. O. Rutherford (Hunter Valley), Dr. K. W. Alexander (Illawarra Suburbs), Dr. T. D. Wilkins (Kuring-gal District), Dr. J. R. Ryan (North Eastern), Dr. S. Shineberg (Northern District), Dr. H. Rich (South Eastern), Dr. J. S. Storey (Southern District), Dr. K. C. Mallett (South Sydney), Dr. R. G. Bligh (Warringah District), Dr. S. R. Dawes (Western), Dr. R. J. J. Speight (Western Suburbs).

#### Library.

Dr. A. M. McIntosh was appointed to the position of Honorary Librarian.

Visitors to the Library .. .. .	6,953
Books lent to members .. .. .	1,302
Journals lent to members .. .. .	4,273
Books added to the Library .. .. .	195
Journals added to the Library .. .. .	9

The above figures all show an increase on the figures for the same period last year, and the Council is pleased to record the increasing use of the Library by country members.

During the period under review there has been an increase in the number of donations made to the Library files by individual members, and the Council wishes to convey its appreciation to those concerned in this connexion, as well as to the librarians and staffs of allied and scientific libraries and organizations who have so willingly and efficiently cooperated in providing information and material when required.

The undermentioned donations are acknowledged with grateful thanks: The Editor, THE MEDICAL JOURNAL OF AUSTRALIA; Abbott Laboratories; Allen and Hanburys (A'sia) Limited; American College of Surgeons; Dr. J. C. Belisario; Dr. E. P. Blaschki; British Empire Cancer Campaign; from the Library of the late Dr. G. A. Brookes; Professor A. N. Burkitt; Dr. G. G. Burniston; Dr. D. G. Carruthers; Dr. V. M. Coppleston; Dr. H. J. Daly; Dr. H. C. Rutherford Darling; Dr. Clyde Davis; Dr. Lindsay Dey; Director of the Pan-American Sanitary Institute; Dr. J. Witton Flynn; from the Library of the late Dr. W. M. A. Fletcher; Government Statistician; Grayson Foundation, Inc.; Dr. M. Henley; Dr. J. Indyk; Dr. A. L. Lance; J. B. Lippincott Company; Medical and Chirurgical Faculty of the State of Maryland Library; Metropolitan Life Insurance Company, New York; Dr. I. D. Miller; Dr. L. A. Musso; National Institute of Health Library, Bethesda, Maryland; National Nephroses Foundation; Post-Graduate Committee in Medicine, University of Sydney; Public Health Department of New South Wales; Queensland Institute of Medical Research; Royal Australasian College of Physicians; Dr. J. E. Sherwood; Dr. R. J. Silvertown; Stanford University (Lane Medical Library), California; Dr. K. W. Starr; Dr. F. G. N. Stephen; United States Armed Forces Library; United States Information Library; University of Melbourne; Vanderbilt University School of Medicine Library, Tennessee; the College of Radiologists (Australia and New Zealand); the Oto-Rhino-Laryngological Society of New South Wales (British Medical Association); the Section of Medicine; and the Section of Obstetrics and Gynecology.

#### Affiliated Local Associations of Members.

Blue Mountains (affiliated 1944): *Chairman*, Dr. A. L. Langley; *Honorary Secretary*, Dr. N. Larkins. Membership 29. Four meetings were held.

Border (affiliated 1908): *Chairman*, Dr. L. S. Woods; *Honorary Secretary*, Dr. B. M. Twomey. Membership 20. Four meetings were held.

Brisbane Water District (affiliated 1948): *Chairman*, Dr. O. M. Spence; *Honorary Secretary*, Dr. G. C. Duncan. Membership 18. Four meetings were held.

Broken Hill (affiliated 1942): *Honorary Secretary*, Dr. Franziska Schlink.

Canterbury-Bankstown (affiliated 1930): *Chairman*, Dr. W. B. White; *Honorary Secretary*, Dr. A. Rumore. Membership 69. Six meetings were held.

Central Northern (affiliated 1910): *Chairman*, Dr. J. Sullivan; *Honorary Secretary*, Dr. H. W. Rundle. Membership 105. Ten meetings were held.

Central Southern (affiliated 1909): *Chairman*, Dr. E. B. Docker; *Honorary Secretary*, Dr. F. B. Uther. Membership 66. Two meetings were held.

Central Western (affiliated 1910): *Chairman*, Dr. A. K. Smith; *Honorary Secretary*, Dr. K. S. M. Brown. Membership 70. Two meetings were held.

Eastern District (affiliated 1913): *Chairman*, Dr. F. W. Bayldon; *Honorary Secretary*, Dr. A. McNeill. Membership 40. Three meetings were held.

Eastern Suburbs (affiliated 1911): *Chairman*, Dr. L. H. McMahon; *Honorary Secretary*, Dr. H. N. Merrington. Membership 149. Six meetings were held.

Far South Coast and Tablelands (affiliated 1935): *Chairman*, Dr. J. F. Ireland; *Honorary Secretary*, Dr. J. D. O'Keefe. Membership 18. Three meetings were held.

Hunter Valley (affiliated 1947): *Chairman*, Dr. D. L. Peate; *Honorary Secretary*, Dr. A. J. R. Clarke. Membership 43. Five meetings were held.

Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. R. H. Kaines; *Honorary Secretary*, Dr. K. W. Alexander. Membership 132. Four meetings were held.

Kuring-gal District (affiliated 1929): *Chairman*, Dr. T. M. Clouston; *Honorary Secretary*, Dr. R. C. White. Membership 102. Four meetings were held.

Northern District (affiliated 1911): *Chairman*, Dr. Ellen Kent Hughes; *Honorary Secretary*, Dr. H. G. Royle. Membership 83. Three meetings were held.

North Eastern (affiliated 1913): *Chairman*, Dr. G. S. Calnan; *Honorary Secretary*, Dr. N. J. Rogers. Membership 74. Three meetings were held.

Southern District (affiliated 1909): *Chairman*, Dr. L. E. Goldsmith; *Honorary Secretary*, Dr. J. L. Tunley. Membership 36. Two meetings were held.

South Eastern (affiliated 1914): *Chairman*, Dr. M. C. McKinnon; *Honorary Secretary*, Dr. N. J. D. Powrie. Membership 60. Four meetings were held.

South Sydney (affiliated 1909): *Chairman*, Dr. K. C. Mallett; *Honorary Secretary*, Dr. J. G. A. O'Neill.

Warringah District (affiliated 1929): *Chairman*, Dr. E. S. Stuckey; *Honorary Secretary*, Dr. R. T. C. Hughes. Membership 128. Five meetings were held.

Western (affiliated 1908): *Chairman*, Dr. N. D. Barton; *Honorary Secretary*, Dr. S. R. Dawes. Membership 111. Three meetings were held.

Western Suburbs (affiliated 1908): *Chairman*, Dr. P. A. Tomlinson; *Honorary Secretary*, Dr. W. J. Smith. Membership 132. Four meetings were held.

#### Annual Meeting of Delegates.

The forty-second annual meeting of delegates of the affiliated local associations of members with the Council was held on Friday, September 30, 1955.

The delegates present at the meeting were as follows: Blue Mountains, Dr. W. T. Lesslie; Border, Dr. M. M. Ramsden; Brisbane Water District, Dr. J. A. Paul; Canterbury-Bankstown, Dr. L. Abramovich; Central Southern, Dr. B. W. Monahan; Central Northern, Dr. T. W. Edmeades; Central Western, Dr. G. N. M. Aitkens; Eastern District, Dr. A. McNeill; Eastern Suburbs, Dr. A. D. J. Frost; Far South Coast and Tablelands, Dr. W. P. H. Dakin; Hunter Valley, Dr. L. O. Rutherford; Illawarra Suburbs, Dr. K. W. Alexander; Kuring-gal District, Dr. C. Warburton; North Eastern, Dr. J. Gribben; Southern District, Dr. L. E. Goldsmith; South Eastern, Dr. N. J. D. Powrie; South Sydney, Dr. J. G. A. O'Neill; Warringah District, Dr. R. G. Bligh; Western, Dr. G. B. Downes; Western Suburbs, Dr. R. J. J. Speight.

#### Special Groups for the Study of Special Branches of Medical Knowledge.

Allergy (inaugurated 1947): *Chairman*, Dr. R. S. Steel; *Honorary Secretary*, Dr. Bernard Riley. Membership 15. Four meetings were held.

Anaesthesia (inaugurated 1934): *Chairman*, Dr. L. T. Shea; *Honorary Secretary*, Dr. C. A. Sara. Membership 46. Five meetings were held, one in conjunction with a meeting of the Branch.

Medicine (inaugurated 1924): *Chairman*, Dr. R. S. Steel; *Honorary Secretary*, Dr. J. Isbister. Membership 83. Eight meetings were held, five in conjunction with meetings of the Branch.

Neurology, Psychiatry and Neurosurgery (inaugurated 1924): *Chairman*, Dr. I. G. Simpson; *Honorary Secretary*, Dr. C. Radeski. Membership 104. Nine meetings were held, two in conjunction with meetings of the Branch.

Obstetrics and Gynecology (inaugurated 1925): *Chairman*, Dr. F. N. Chenhall; *Honorary Secretary*, Dr. F. A. Bellingham. Membership 99. Five meetings were held, one in conjunction with a meeting of the Branch.

Occupational Medicine (inaugurated 1952): *Chairman*, Dr. W. E. George; *Honorary Secretary*, Dr. G. C. Smith. Membership 30. Five meetings were held.

Orthopaedic Group (British Medical Association) (inaugurated 1923): *Chairman*, Dr. H. R. T. Hodgkinson; *Honorary Secretary*, Dr. A. I. Rhydderch. Membership 23. Four meetings were held.

Oto-Rhino-Laryngological Society of New South Wales (inaugurated 1924): *Chairman*, Dr. L. S. Corner; *Honorary Secretary*, Dr. T. H. O'Donnell. Membership 46. One meeting was held.

Pædiatrics (inaugurated 1924): *Chairman*, Dr. Kathleen Winning; *Honorary Secretary*, Dr. S. E. J. Robertson. Membership 99. Four meetings were held, one in conjunction with a meeting of the Branch.

Pathology (inaugurated 1924): *Chairman*, Dr. J. L. Holme; *Honorary Secretary*, Dr. R. E. J. ten Seldam. Membership 81. Eight meetings were held, one in conjunction with a meeting of the Branch.

Radiology (inaugurated 1926): *Chairman*, Dr. D. G. Maitland; *Honorary Secretary*, Dr. E. W. Frecker. Membership 77. Eleven meetings were held, two in conjunction with meetings of the Branch.

Surgery (inaugurated 1925): *Chairman*, Dr. F. F. Rundle; *Honorary Secretary*, Dr. A. C. R. Sharp. Membership 56. Five meetings were held, four in conjunction with meetings of the Branch.

Urology (inaugurated 1940): *Chairman*, Dr. D. C. Trainor; *Honorary Secretary*, Dr. H. G. Cummine.

#### Australasian Medical Congress (British Medical Association), Ninth Session.

The Council has much pleasure in reporting the success which attended the holding of the Australasian Medical Congress at the University of Sydney on August 20 to 27, 1955, for the organization of which the Branch was responsible.

With a membership of 1514 and an honorary membership of 89, it was the largest Congress ever held in Australia. It was also considered to be the most successful by those best competent to judge.

Sir Charles Bickerton Blackburn, Kt., O.B.E., was appointed President following the death of Sir Archibald Collins.

The inaugural meeting was held on the evening of Monday, August 22, when the Congress was opened by Field-Marshal Sir William Slim, G.C.B., G.C.M.G., G.C.V.O., G.B.E., D.S.O., M.C., Governor-General of Australia. Sir Charles Blackburn delivered the presidential address to a large audience.

The Congress dinner was held at David Jones Limited at 7.15 p.m. on Wednesday, August 24, when 600 persons, members and wives, were present. The dinner was attended by His Excellency the Governor of New South Wales, Lieutenant-General Sir John Northcott, K.C.M.G., K.C.V.O., C.B.

A distinguished visitor in the person of Dr. Louis H. Bauer, Secretary-General of the World Medical Association, delivered the Sir Henry Simpson Newland Oration in the Great Hall, University of Sydney, on the evening of Thursday, August 25. Prior to the address, the University of Sydney conferred the degree of Doctor of Science, *honoris causa*, on Dr. Bauer.

At the same time, Dr. A. Talbot Rogers, Chairman, General Medical Services Committee, British Medical Association, presented the Gold Medal of the Association for Distinguished Merit to Sir Henry Simpson Newland, Kt., C.B.E., D.S.O., LL.D., M.S., F.R.C.S., F.A.C.S., in recognition of his outstanding services to the Association and to the medical profession.

The Congress Ball was held at the Trocadero on the evening of Friday, August 26, when overseas guests and members of other States and their wives were the guests of members of the New South Wales Branch.

Much of the success of the Congress from the social aspect was due to the Ladies' Committee under the able presidency of Lady Collins. This Committee was responsible for the organization of the Social Club, which was situated in the Robert H. Todd Assembly Hall, British Medical Association House, and for the general organization of a large number of private and group entertainments and excursions. The wonderful cooperation of members and their wives in providing private entertainments was greatly appreciated.

An exhibition of doctors' hobbies, organized by Dr. Grant Lindeman and Dr. M. H. Elliot-Smith, was an attractive feature of the Congress. It gave members an excellent opportunity of appreciating the versatility of their colleagues in hobbies, ranging from toy making to the fashioning of tools, and of admiring their talents in the arts.

The scientific aspect of Congress was covered by an extensive programme in which 268 papers of a generally high standard were read, some by overseas visitors. The papers covered all branches of medicine and surgery. The arrangement of the programme of scientific papers was in the hands of the Committee of Honorary Secretaries of Sections, of which Dr. K. S. Harrison was Chairman.

The Museum and Science Exhibition Committee, under the chairmanship of Dr. E. F. Thomson, provided a most interesting and diverse collection of scientific exhibits, which added greatly to the success of the scientific side of the Congress. Another attraction was the large number of scientific films which were shown.

It would be amiss if no reference were made to the Trade Exhibition. This exhibition, the largest of its kind ever to be held in Australia, afforded a comprehensive view of the drugs, materials and appliances used in modern medical practice. A tribute must be paid to the exhibitors for the excellent display which they provided. The organization of this exhibition was carried out by the Trades Exhibition Committee, of which Dr. V. M. Coppleson was chairman.

The general overall organization of the Congress was in the hands of the Executive Committee, of which the President, Sir Charles Blackburn, was chairman. It was ably supported by the General Amenities Committee under the chairmanship of Dr. S. H. Lovell.

Finally, thanks must be expressed to the University of Sydney for making the University available in which to hold the Congress, and for the great help which it extended in all directions.

#### Sir Charles Bickerton Blackburn, Kt., O.B.E.

On the evening of Wednesday, April 20, a dinner was given Sir Charles Blackburn by members of the New South Wales Branch. The dinner afforded an opportunity to a large number who were present to mark their appreciation and respect for an outstanding leader of the profession.

#### Dr. A. Talbot Rogers.

During the year the profession in Australia was honoured by the visit of Dr. A. Talbot Rogers.

A member of the Central Council and chairman of the General Medical Services Committee of the British Medical Association, Dr. Talbot Rogers represented the Parent Body at the Australasian Medical Congress. He acted as chairman of the Plenary Session on rehabilitation at the Congress.

#### Federal Council of the British Medical Association in Australia.

The Federal Council of the British Medical Association in Australia met in Sydney on August 17 to 24, 1955, and in Hobart on February 27 to March 1, 1956. The Branch was represented at the first of these meetings by Dr. A. J. Murray, Dr. W. F. Simmons and Dr. T. Y. Nelson, who acted as a substitute for Dr. E. F. Thomson. Dr. E. F. Thomson had been appointed as a representative of the Branch for the remainder of the year ended December 31, 1955, following the death of Sir Archibald Collins.

At the second of the meetings the Branch was represented by Dr. A. J. Murray, Dr. W. F. Simmons, Dr. H. R. R. Grieve and Dr. R. H. Macdonald.

Dr. A. J. Murray was elected Vice-President of the Federal Council at its meeting in Hobart.

#### British Medical Association Lectures.

Lectures were arranged as follows:

Eastern District Medical Association: Sir Norman Gregg, Kempsey, March 26, 1955—"Ocular Emergencies in General Practice".

Western Medical Association: Dr. Adrian Johnson: Parkes, December 11, 1955—"Common Skin Diseases", illustrated by Kodachrome slides.

#### National Health Service: Pensioner Medical Service.

Under date February 13, 1956, a communication was forwarded to members drawing their attention to abuses under the Pensioner Medical Service. The circular pointed to the fact that the average number of attendances on pensioners in New South Wales exceeded those for the whole of Australia.

The Council felt that members would fully agree that the good name and prestige of the profession would be jeopardized by action on the part of any member which could be considered an exploitation of the Pensioner Medical Service.





trend towards State regulation and State control of medical practice.

The extension of activities in this direction will necessitate, however, the expenditure of a large amount of money, and to meet this expenditure the Council decided to establish a Public Relations Fund. A communication was addressed to members on February 13, 1956, in connexion with the matter and an invitation was extended to them to subscribe to the fund.

#### Workers' Compensation Act, 1926-1954: Schedule of Fees.

During the year an agreement was reached with the Associated Licensed Insurers, the Government Insurance Office of New South Wales, and the Non-Tariff Insurance Association of Australia.

A new schedule of fees—known as Schedule "H"—was introduced.

The agreement was only reached, however, after prolonged negotiations and with the intervention of the Honourable A. Landi, Minister for Labour and Industry and Social Welfare, at the request of Council.

#### Committee for Placement of Resident Medical Officers.

Once again the Committee for Placement of Resident Medical Officers on which the Association is represented, was actively engaged in the allocation of Resident Medical Officers.

The number who graduated at the last final examination was 177. This number was insufficient to fill the vacancies in the various hospitals.

This year the Committee and the Joint Committee of the University and the Teaching Hospitals met together and as a result overcame some of the difficulties which had occurred in previous years as a result of the two committees meeting separately.

#### By-Laws.

By-law 4 (Annual Subscription) was amended at an extraordinary general meeting held on November 24, 1955, by the addition of the following words at the end of Clause (d), namely:

Provided that where such a member has the right of private practice and exercises that right, the subscription payable by him shall be nine pounds nine shillings.

The effect of the amendment is that a member who is a whole-time member of the Public Service of the Commonwealth of Australia (including the defence services) or of the State of New South Wales (including the New South Wales Government Railways and the University of Sydney) or who is a whole-time member of a staff of a public hospital, or who is engaged in practice solely as an employee of any authority, corporation, company, association or body and who is thereby entitled to a subscription rate of seven pounds seven shillings, will be called upon to pay the full rate of nine pounds nine shillings if he has the right of private practice and exercises that right.

By-law 30 was amended at an extraordinary general meeting held on November 24, 1955.

The amendment provides for the appointment of three representatives of the Branch in the Representative Body of the British Medical Association in lieu of one representative and one or more deputy representatives. The necessity for the amendment was brought about by an alteration to the constitution of the Representative Body made by the Parent Body.

#### Department of Medical Sociology and Research.

The Department has continued, mainly through radio talks over the national stations, its work of popular education in health and medical subjects. As previously, assistance was frequently given to the Press and broadcasting stations in the sub-editing or explanation of material on those topics.

During the year the Australasian Medical Congress required work of a journalistic nature. The range of the Department has recently been widened in preparation for public relations activities, and some material on that subject has been distributed to members.

#### King's Banner.

The King's Banner of the Royal Australian Army Medical Corps, which had hung in the Robert H. Todd Assembly Hall since 1941, was returned to the Department of the

### NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

#### BRANCH ACCOUNT.

#### Income and Expenditure Account for the Year Ended December 31, 1955.

	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
To Salaries .. . . .	11,655	3	3				By Subscription Revenue .. .				32,234	9	3
" Rent—Offices, etc. . . . .	1,200	0	0				Less Proportion due to—						
" Printing and Stationery .. .	1,806	16	3				British Medical Association	5,984	15	5			
" Stamps and Telegrams .. .	96	6	11				THE MEDICAL JOURNAL OF						
" Telephones .. .	346	0	6				AUSTRALIA .. . . .	1,857	2	6			
" Travelling Expenses—General ..	275	16	0								7,841	17	11
" Code Address .. .	3	8	0								24,292	11	4
" Insurance .. .	38	2	0				" Interest .. . . .	600	5	3			
" Exchange and Bank Charges ..	12	14	1				" Rent Assembly Hall .. . . .	413	7	1			
" Refreshments—Meetings .. .	61	7	8				" Broadcasting and Journalist Fees	260	18	6			
" Newspapers .. .	82	3	11				" Accountancy Fees .. . . .	100	0	0			
" Sundry Petty Expenses .. .	30	1	3				" Refund Expenses Federal Council	89	5	0			
" Tea Money .. .	139	6	11								1,463	15	10
" Federal Council .. .	3,925	19	0										
" Legal Expenses .. .	13	2	0										
" Repairs and Maintenance Equip-													
ment .. . . .	57	3	7										
" Payroll Tax .. .	214	12	8										
" Medical Benefits Fund—Staff ..	17	19	9										
" Staff Superannuation Fund ..	623	17	6										
" Incidental, Travelling and Enter-													
tainment Expenses .. . . .	324	0	0										
" Bank Interest .. . . .	53	11	8										
" Stamp Duty .. . . .	57	13	7										
" Expenses—Cricket Match .. .	7	14	0										
" Fares and Cartages .. . . .	15	11	4										
" Secretarial Service .. . . .	87	11	0										
" Reporting Fees .. . . .	14	7	0										
" Laundry .. . . .	31	2	3										
				22,063	12	1							
" Depreciation—													
Library .. . . .	778	15	0										
Furniture and Equipment ..	149	5	7										
				928	0	7							
" Provision for Long Service Leave				100	0	0							
" Balance, being Surplus for Year													
ended December 31, 1955,													
transferred to Accumulated													
Fund Account .. . . .				2,764	14	6							
				£25,856	7	2					£25,856	7	2



Army towards the end of last year in order that it might be placed in the Australian War Memorial in Canberra.

Known as "Honourable Insignia", it was presented to the Australian Army Medical Corps in 1904 by His Majesty King Edward VII in recognition of the service in South Africa by the New South Wales Medical Corps.

#### Golf Tournament.

The annual golf tournament for the British Medical Association Cup, presented by Dr. H. C. Rutherford Darling, was held on Thursday, August 25, during Congress Week, on the golf course of the Australian Golf Club, Kensington. The cup was played for at the same time as the Congress trophy, the T. G. Wilson Cup, presented by Sir George Wilson.

The winners were Dr. W. L. Calov and Dr. B. A. Cook (equal). Trophies were presented at the Branch meeting held on Thursday, September 29, 1955.

#### World Medical Association.

As mentioned in last year's report, the Council has established itself as a Supporting Committee of the World Medical Association. Since January 1, 1956, members have contributed a sum of over £650, which will be of help to the World Medical Association in affirming the views of the practising profession throughout the world regardless of whether they agree or conflict with those held by governments.

Dr. L. R. Mallen, a South Australian representative on the Federal Council, continues to act as a member of the Council of the World Medical Association, and Dr. J. G. Hunter as Secretary for Australasia.

#### The British Medical Agency of New South Wales.

The annual general meeting of the British Medical Agency of New South Wales Limited was held on October 4, 1955. The chairman, Dr. George Bell, presented the report.

A small loss was shown for the year. There was a loss of A.M.P. business as from April 1, 1955, but the directors have concluded an agreement with the Australian Provincial Assurance Association Limited.

Once again the directors look to members to give their support to the agency.

#### Medical Finance Limited.

The annual general meeting was held on October 4, 1955.

The report, which was presented by the chairman, Dr. George Bell, showed a small profit for the year. Demand for the company's funds continued to be limited whilst conditions permitted loans from banks being available at lower interest rates.

#### Premises Revenue Account.

The Premises Revenue Account disclosed a net surplus of £857 as against a net surplus of £1104 for the year ended December 31, 1954, thus showing a decrease of £247 in the net revenue earned. This decrease is accounted for by a net increase in income of £880 and a net increase in expenditure of £1126.

A comparison of percentages of expenditure to rent revenue with those of December 31, 1954, is as follows:

	1954.	1955.
Percentages of Expenses to Revenue ..	96.5	97.1
Percentages of Surplus to Revenue ..	3.5	2.9
	100%	100%

The percentage of rent revenue, expenses and depreciation and the percentage of net surplus for the year to capital value of the land and building (British Medical Association House) as shown by the books at December 31, 1955, namely, £129,053, with the previous year's percentages in parentheses, are as follows:

Rent Revenue (including amount charged for British Medical Association Branch Offices, etc.) ..	22.9%	(21.9%)
Sundry Expenses, Interest, Provisions for Painting, etc. ..	20.1%	(18.9%)
Depreciation of Building ..	2.2%	(2.1%)
	0.6%	(0.9%)

#### Financial Statement.

The Council has pleasure in presenting to members the balance sheet and accounts in respect of the financial year which terminated on December 31, 1955.

The net surplus of revenue over expenditure for the year amounted to £3821 8s. 3d., after making provision for all known expenditure.

The sum of £3781 12s. 4d. has been written off for depreciation of the building (British Medical Association House), plant, office furniture and equipment and the library.

The sum of £800 has been provided out of the current year's revenue to create a reserve for painting of the exterior of the building and £150 as a provision for long service leave. These amounts for the time being are used in the business of the Association.

H. HASTINGS WILLIS,  
President.

The balance sheet of the Branch and the income and expenditure account of the Branch and of the premises were received and adopted on the motion of Dr. George Bell, seconded by Dr. W. F. Simmons.

#### ELECTION OF OFFICE-BEARERS.

Dr. H. H. Willis announced that the following had been elected to the Council as representatives of the general body of members for the ensuing year: Dr. M. S. Alexander, Dr. Hugh C. Barry, Sir Charles Bickerton Blackburn, Dr. D. A. Brown, Dr. T. M. Clouston, Dr. B. T. Edye, Dr. G. L. Howe, Dr. R. H. Macdonald, Dr. A. W. Morrow, Dr. A. J. Murray, Dr. T. Y. Nelson, Dr. J. A. Pane, Dr. K. C. T. Rawle, Dr. E. S. Stuckey, Dr. P. A. Tomlinson, Dr. D. A. Warden.

Elected as Representing Women Members.—Dr. Clair Isbister.

Elected as Representing the Public (Government) Medical Services.—Dr. L. W. Wing.

Elected as Representing Country Local Associations.—Dr. B. A. Cook, Dr. J. P. Lytle.

Elected as Representing Metropolitan Local Associations.—Dr. K. S. Jones, Dr. C. R. M. Lavery.

Messrs. F. W. Duesbury and Company were elected auditors for the ensuing year.

#### ELECTION OF REPRESENTATIVES OF THE BRANCH AT THE ANNUAL REPRESENTATIVE MEETING OF THE BRITISH MEDICAL ASSOCIATION, 1956, BRIGHTON.

On the motion of Dr. T. Y. Nelson, seconded by Dr. C. R. M. Lavery, Dr. R. R. Winton, Dr. B. R. Morey and Dr. Baden R. Cooke were appointed representatives of the Branch to attend the Annual Representative Meeting of the British Medical Association to be held at Brighton from July 5 to 9, 1956.

#### INCOMING PRESIDENT'S ADDRESS.

Dr. E. F. Thomson delivered his incoming president's address (see page 729). A vote of thanks to Dr. Thomson for his address was carried on the motion of Dr. M. S. Alexander, seconded by Dr. E. S. Stuckey.

#### INDUCTION OF PRESIDENT.

Dr. H. H. Willis inducted the President for the year 1955-1956, Dr. E. F. Thomson, and invested him with the presidential badge of office. Dr. Thomson thanked the members for his election.

### Medical Societies.

#### PÆDIATRIC SOCIETY OF VICTORIA.

A MEETING of the Pædiatric Society of Victoria was held at the Royal Children's Hospital, Melbourne, on February 8, 1956.

#### Disseminated Lupus Erythematosus.

Dr. G. R. WEIGALL presented the clinical details of a male child, aged six years, who he thought showed the picture of a diffuse collagen disease, probably disseminated lupus erythematosus.

The child was admitted to the Alfred Hospital, Melbourne, at the age of four years in April, 1954, and was said to have had periods of malaise for five or six weeks, during which time he had painful swollen joints and an intermittent mild rise in temperature. He had been a two-months premature baby, and at nine months of age had been admitted to hospital, where he remained for three months with bilateral mastoiditis. For two years he had been troubled with hives and was said to be allergic to chocolate and the red colouring pigment in sweets. There was no history of bleeding disease in the family.

A study of his present history in greater detail revealed that six weeks earlier he had developed a painful swelling of the left ankle and an urticarial eruption, which settled over a period of three weeks. Since then the child had complained of fitting pains in various joints—elbows, wrists and ankles—and was rather irritable. The skin rash recurred in mild form, and he was noticed to bruise easily. He had also had a slightly blood-stained mucous discharge from the nose for two to three weeks before admission to hospital. His appetite over that period had been only fair, but there were no other symptoms.

When first examined, he was noticed to be a somewhat pale, irritable child with a temperature of 100° F., a pulse rate of 126 per minute and a blood pressure of 110 millimetres of mercury (systolic) and 65 millimetres (diastolic). His tonsils were moderately enlarged and chronically infected. His heart and chest were clinically normal. The liver and spleen were not palpable, and no glands were felt. He had bruises over both shins, the right forearm and the left buttock, as well as a painful red swelling of his right wrist and forearm of twelve hours' duration and a generalized raised macular rash. There was no cyanosis or clubbing of the fingers.

During the first week in hospital he had an intermittently raised temperature (maximum 101° F.) and fleeting urticarial rashes, but no joint swellings, though he complained of pain in his limbs. He did not respond to treatment with "Anthisan" and "Phenergan". His haemoglobin value and leucocyte count were normal, and a clotting time estimation, at first twelve minutes, when repeated was normal.

On the twelfth day his temperature rose to 104° F., and a small patch of exudate was noted on his right tonsil. The result of attempted throat swab culture was negative. The temperature subsided to normal after three days without treatment, and he remained comparatively well. However, on the eighteenth day the temperature again rose to 105° F.

The rash returned, but general examination revealed no abnormality. The results of attempted blood culture and agglutination tests carried out at this time were all negative. Three days later the child looked very ill, with a temperature of 105° F. The spleen was just palpable, and small glands were felt in the neck and axillae. Treatment with penicillin, 100,000 units six-hourly, was begun without any result, his condition becoming worse.

During the next forty-eight hours he had an epistaxis, his abdomen became very distended and was tender under the left costal margin, and the spleen was palpable. He had had no vomiting or diarrhoea, his bowels being opened normally that day. Although he was sick, he remained very alert mentally. A surgeon did not regard the condition as surgical.

Blood culture and agglutination tests were repeated, and specimens of urine and faeces were taken for culture. The penicillin therapy was stopped, and administration of "Chloromycetin", 750 milligrammes *statim* and 250 milligrammes six-hourly, was begun.

On the following day his abdomen was less distended, there was a fine erythematous rash on his face and trunk, and his spleen was palpable and tender. He complained of pain in the legs and had much neck stiffness, though he was still very clear mentally and had no photophobia. A lumbar puncture revealed crystal clear cerebro-spinal fluid at normal pressure; examination of the fluid revealed no abnormality.

Then the child developed enlarged tender cervical glands twenty-seven days after his admission to hospital, and generalized lymph gland enlargement was present. His temperature had gradually subsided to normal and the leucocyte count was 3000 per cubic millimetre. In view of this, the "Chloromycetin" therapy was discontinued.

He remained free from symptoms for six days, when his temperature again rose to 104° F., and for the following six days he ran a swinging temperature between 99° and 103° F. His haemoglobin value had fallen from 11.4 to 9.6 grammes per centum, but his leucocyte count was 8000 per cubic millimetre. His abdomen was again distended, with tender-

ness under the left costal margin, and the liver was palpable. A large and tender gland one inch in diameter was felt in the right axilla. A biopsy was taken of this gland, as well as a rib and muscle biopsy. Examination of the sections showed no changes suggestive of Hodgkin's disease, leucemia or *lupus erythematosus*, but only a little non-specific medullary hyperplasia in the lymph gland.

After the operation, two small petechiae were noted, and considerable oozing occurred from the biopsy sites. During the night the patient had a moderately severe epistaxis, which was controlled by packing the anterior nares. He was also troubled by a harsh cough.

On the following morning he was extremely pale and listless, with a haemoglobin value of 4.8 grammes per centum, a leucocyte count of 5000 per cubic millimetre and a platelet count of only 6000 per cubic millimetre. One pint of blood was given with considerable clinical improvement.

Three days later his former symptoms returned, the temperature again rose to 105° F., the abdomen became swollen and tender, and the spleen and liver became palpable and tender. Over the next forty-eight hours he became much worse, and administration of cortisone 25 milligrammes six-hourly was started. Eight hours later his temperature fell dramatically to 95° F., returning to 98° F. over the next four hours.

The dosage of cortisone was gradually reduced to 50 milligrammes daily over four days. The temperature remained normal, and there was much clinical improvement. At this stage the leucocytes still numbered 2000 per cubic millimetre, but the platelets had risen in number to 182,000 per cubic millimetre.

An attempt to reduce the dosage of cortisone fifteen days after commencement from 50 milligrammes to 25 milligrammes was foiled by a rise in temperature to 100° F., and the dosage was eventually reduced after twenty-seven days.

By now the child looked well and was out of bed. There were no palpable glands, the abdomen, although very slightly distended occasionally, was not tender, and the spleen was not palpable. Near the end of his term of cortisone treatment, his temperature rose alarmingly; but the diagnosis of varicella was made with much relief, and he was afebrile again two days later.

His temperature then remained normal. He ate well, and was up and about. His haemoglobin value on discharge was 12.5 milligrammes per centum, the leucocytes numbered 6000 per cubic millimetre, and adequate platelets were present in the film. He was discharged from hospital three months after admission.

Dr. Weigall said that since then the child had had periods of being quite well, and times when he had swollen joints (the ankles usually), a rash and a temperature up to 103° F. for days at a time, not influenced by antihistamine drugs or other therapy. He had had no more cortisone.

In April, 1955, he contracted mumps, which ran a normal mild course. In July he had a more than usually severe exacerbation with fever, but no other positive findings. In November he had a cold with bronchitis and was admitted to the ward. The result of X-ray examination of the chest was negative, and his tonsils showed chronic infection. No specific organisms were grown in culture. The tonsils were removed successfully, with no bleeding or delay in healing.

His periods of well-being then began to last longer. The exacerbations were less frequent and less severe until the recent hot weather in January, 1956, when he was not as well, the rash being commonly present, the joints swollen and painful at the end of the day, and the evening temperature often up to 102° or 103° F. He had lost several pounds in weight, and his haemoglobin value was considerably lower at present. Dr. Weigall said that he proposed to readmit the patient to hospital and asked for advice regarding the diagnosis and whether cortisone treatment should be commenced again.

DR. A. L. CLARK then analysed the features of disseminated *lupus erythematosus* as he had found it to occur in children, by reference to the records of the Royal Children's Hospital, Melbourne. However, he said that those records had yielded only one proven case of disseminated *lupus erythematosus*, one probable case, and numerous cases in which the diagnosis had been considered but had been abandoned for want of sufficient supporting evidence.

The proven case was that of a female child, aged thirteen years, who had been admitted to the Royal Children's Hospital, Melbourne, in 1952. Her first symptom was a blotchy rash, which appeared intermittently on her face. Four weeks after the first appearance of this rash there were noted fever, generalized muscular weakness, mild diarrhoea



and bilateral chest pain aggravated by deep breathing. Those manifestations were followed within two weeks by the development of oedema of the legs.

Examination of the patient six weeks after the onset of the illness revealed that she was a dyspnoic girl with well-developed secondary sexual characteristics. There was maculo-papular erythema of the face with widely dispersed macules on the trunk and limbs. Petechiae and superficial ulcers were present on the buccal mucosa, palate and tongue. Some conjunctival infection of the right eye was evident. Bilateral pleural effusions, ascites and pitting oedema of the legs to the level of the knees were present, but no other abnormalities were discovered on physical examination. Her blood pressure was 120 millimetres of mercury, systolic, and 70 millimetres of mercury, diastolic. Urine testing disclosed the presence of heavy albuminuria, and on microscopic examination of the urine occasional red blood cells and leucocytes, and numerous hyaline, granular and cellular casts were seen.

The provisional diagnosis of disseminated *lupus erythematosus* was made, and on examination of an incubated sample of heparinized venous blood many L.E. cells were seen.

Bed rest, fluid restriction and a diet of high protein and low salt content did not result in diuresis, and three weeks after admission to hospital the patient suffered from several generalized epileptiform convulsions. Mepacrine and cortisone were then administered, but she became unconscious and died one week later. The duration of her illness from the first appearance of the rash to her death was ten weeks.

The second case was that of a male child, aged twelve years, who had been admitted to the Royal Children's Hospital in July, 1955. His first complaint was of pains in the large joints of the arms and legs, accompanied by a rash on the face and knuckles. Two weeks later he complained of extreme weakness.

Examination of the child three weeks after the onset of the illness revealed that he was moderately obese with poorly developed secondary sexual characteristics. Generalized muscular weakness was such that he was unable to sit up in bed. An erythematous area of "butterfly" distribution was seen on the face with erythematous patches on the extensor surfaces of the metacarpo-phalangeal and interphalangeal joints of the hands, elbows and knees. No other abnormalities were discovered on physical examination or on examination of the urine.

The provisional diagnosis of disseminated *lupus erythematosus* was made, but no L.E. cells were demonstrated in peripheral blood or bone marrow. Paper electrophoretic studies of a sample of the patient's serum revealed reversal of the albumin:globulin ratio, with increased  $\alpha_2$  and  $\gamma$  fractions of the globulin.

Cortisone was given orally, in a dosage of 200 milligrammes per day, and within two days there was improvement, as indicated by increasing muscular power. In the seven months since his admission to hospital it had been found necessary to continue the administration of large doses of cortisone. One attempt at gradual withdrawal had been followed within a few days by exacerbation of weakness and the onset of dysphagia, so that the larger dose was quickly resumed.

The features of disseminated *lupus erythematosus* as seen in these two children were compared with those in a series of 138 cases occurring in adults at the Johns Hopkins University and Hospital reported by McGehee Harvey *et alii*. It was concluded that there were no manifestations in the children that had not been described in the adult series.

Attention was drawn to the reported statement that the incidence of disseminated *lupus erythematosus* before puberty was approximately equal in the two sexes, whereas after puberty the incidence was in the ratio of four females to one male.

Dr. A. WILLIAMS discussed the pathology of disseminated *lupus erythematosus*, using slides prepared from the tissues of the patient whose clinical details had been given by Dr. Clark, to illustrate the histological findings. In that patient abnormalities were detected in heart, lungs, spleen and kidneys.

The heart was macroscopically normal, but examination of sections revealed typical fibrinoid changes in connective tissue septa and also in branches of coronary arteries.

Apart from small areas of infarction the lungs were macroscopically normal. The pleural coverings were also normal. The infarcts, which were not recent, were due to thrombosis of small branches of the pulmonary artery.

The spleen, which was enlarged to four times the normal size, also contained small infarcts. No occluded vessels were seen in sections, but the small arteries had excess fibrous tissue surrounding them. Dr. Williams said that that was regarded as one of the most constant morbid anatomical features of the disease.

The kidneys were enlarged and congested, but without any other remarkable macroscopic features. On low-power microscopic examination the only abnormalities noted were vascular congestion, tubular degeneration and the presence of casts within some tubules. The inspection of glomeruli under higher magnification revealed the typical "bent wire" appearance of capillary loops. The walls had the appearance of a double line enclosing a paler staining material. A few loops showed a hyaline change, and in those an occasional haematoxylin body was noted. Areas of fibrinoid change were also found in the fibrous capsule of the kidney, and in those areas numerous haematoxylin bodies were present.

No abnormality was detected in the brain or its vascular supply.

Dr. Williams said that the basic lesion appeared to be a fibrinoid change in connective tissue, seen in the present case in the connective tissue of the heart, in the capsule of the kidney and in blood vessels. Occurring in the walls of blood vessels it might initiate thrombosis and subsequent infarction. The term fibrinoid was used to describe the appearance of the red fibrillar and amorphous material in sections stained with haematoxylin and eosin. That particular change was seen in fibrous tissue which was injured in many ways, but when seen throughout the body the disease process fell into the group of diseases designated by Klemperer as the collagen diseases. Whilst the chemical nature of the changed tissue was not fully understood, it appeared as if the collagen fibres were infiltrated with a polysaccharide-rich material, possibly a glycoprotein. In addition to the damage to the connective tissue fibres and the ground substance between the fibres, the connective tissue cells were damaged. The damaged nuclei were visualized as haematoxylin bodies, which appeared to be the same as the bodies seen within the L.E. cells. Dr. Williams concluded by saying that morbid anatomical studies revealed the distribution of the lesion but did not elucidate the cause of the disease.

Dr. I. Wood opened the discussion on the subject of disseminated *lupus erythematosus*, but prefaced his remarks by asking Dr. L. TAFT, of the Clinical Research Unit of the Royal Melbourne Hospital, to show some slides of the lupus cell phenomenon.

Dr. Taft showed photomicrographs taken of leucocytes which had been incubated with serum of a patient with lupus. He demonstrated the stages in the development of the lupus cell through the stage of phagocytosis, and said that it was essential when one was examining serum to observe the whole range of the phenomenon before diagnosing the lupus cell. He said that the specificity of the lupus cell had been questioned, as it had been described in cases of rheumatic fever, hemolytic anaemia, penicillin sensitivity and, recently, chronic hepatitis. He then showed slides of two renal biopsies and said that in 11 of 13 cases of *lupus erythematosus* histological changes were found in renal biopsy specimens.

Dr. Wood then referred to several patients who were currently being investigated at the Royal Melbourne Hospital, including a young woman with joint changes only, another female patient thought to have virus hepatitis in a chronic stage, but now showing L.E. cells, and another female patient with a high temperature and rash now making some response to doses of 200 to 300 milligrammes of cortisone daily. He thought that renal biopsies were important, as changes were often seen there even in the absence of clinical renal disease. The question of giving cortisone to patients with mild symptoms was debatable. There seemed to be little evidence at present that cortisone stayed the ultimate march of events.

Dr. R. HAYES commented on Dr. Weigall's patient and said that there were a number of curious features in the child's blood picture during the course of the illness. After the first biopsy there had been an isolated episode of severe thrombocytopenia and leucopenia before any drugs had been given. The marrow at that time did show spaces filled with fatty tissue, and later the child had intermittent anaemia and leucopenia. He wondered whether the marrow was unstable in some way. He had looked for L.E. cells several times with no success. Electrophoresis of serum carried out in November, 1955, had shown a  $\gamma$  globulin value of 0.3 gramme per centum and a slightly raised  $\alpha$  globulin value (0.1 gramme per centum).

Dr. J. COLEBATCH asked Dr. Clark whether it was found that fewer children with *lupus erythematosus* showed the presence of L.E. cells than adults. Regarding therapy, he asked Dr. Wood whether the dose of cortisone had to be high enough to cause the disappearance of eosinophile cells from the blood.

Dr. Clark said, in reply, that nobody had reviewed the condition in childhood as to the L.E. cell frequency, as far as he knew.

Dr. Wood said that the patients seemed to tolerate cortisone better than normal people, and some would take 200 milligrammes per day without "mooning" of the face. One tended to treat them rather like rheumatoid subjects—in other words, to give the lowest dose that seemed effective. In some of the milder cases the patients needed only 50 to 75 milligrammes per day.

Dr. I. MACKAY said that the concept of lupus seemed to be changing. It was a disease in which the lesions were disseminated in both time and space, and it was a long-drawn-out illness. It was appropriate to think of lupus no matter what organ or tissue was involved in a mysterious illness. He thought that it might ultimately be found to be related to an immune response abnormality.

Dr. J. KELLY said that the skin manifestations could be of a wide variety. However, in 15% to 20% of cases, there were no skin manifestations. Alopecia and Raynaud's phenomenon occurred, and sometimes with cortisone an acneiform eruption might be seen.

Dr. A. DAY said that he remembered only one child with the typical bat's wing manifestation on the face. Nearly all the affected patients he had seen had what he called a toxic erythema.

Dr. R. WEIGALL asked whether anybody could comment on the wisdom of giving more cortisone during exacerbations in the first case.

Dr. Wood said that he thought that it would be reasonable to keep the child on a reasonably low dose for six months and then to cease the treatment for six months and compare what happened. One might be able to control exacerbations and make admission to hospital unnecessary for a time.

#### Primary Pulmonary Tuberculosis Presenting with Tracheal Obstruction.

Dr. R. O'REILLY gave the clinical details of a boy, aged three and a half years, who had had primary pulmonary tuberculosis presenting with tracheal obstruction. Dr. O'Reilly said that he was reporting the case to show an unusual mode of presentation and X-ray findings of the disease, and to discuss the management of that type of primary pulmonary tuberculosis.

The boy was the third of four children. There was no family history of tuberculosis, nor was there any known contact with that condition. He was stated to have been quite well until six months before admission to hospital, when his mother thought that he tired more easily than previously, but was otherwise well. Two weeks before admission to hospital he rather insidiously developed a wheeze. That was mainly inspiratory, and it persisted. A week later (one week before admission) he developed a spasmodic cough, which on two or three occasions was associated with the vomiting of thick white sputum. There was no dyspnoea or cyanosis. His appetite was poor for two weeks, and his parents thought that he might have lost a little weight. There was no history of inhalation of a foreign body or of contact with dogs.

The patient was a pale but well-nourished little boy. On examination an inspiratory and expiratory wheeze was found, and a spasmodic brassy cough was heard intermittently. Respirations were not hurried, and there was no cyanosis or chest retraction. Apart from scattered inspiratory and expiratory rhonchi in both lungs, no abnormal physical signs were present in the chest. The liver edge was palpable one and a half fingers' breadth below the right costal margin. The remainder of the findings on clinical examination were normal.

X-ray examination of the chest showed a dense uniform radioopacity extending from the upper part of the right hilum into the apical region of the upper lobe of the right lung. That opacity merged medially into the upper mediastinal shadow and laterally had a clearly demarcated convex border. The trachea in its lower one-third was distorted and narrowed to approximately one-third of its normal width. The hilar shadows were not increased, and the peripheral lung markings were normal. In the lateral

views the opacity was ill defined, but was seen in the region of the apical segment of the upper lobe of the right lung. There was no radiological evidence of pulmonary collapse.

It was considered that the child had a tumour of the mediastinum, the exact nature of which was uncertain, but because of the rapidity of onset, a malignant condition was thought most likely. That, as well as the symptoms and signs of tracheal obstruction, prompted a surgical consultation, and Dr. R. Howard performed a thoracotomy three days after the child's admission to hospital. The diagnosis of tuberculosis was established at operation. Dr. O'Reilly said that Dr. Howard would describe details of the operation. Post-operative convalescence was uneventful, the outstanding feature being the disappearance of cough and wheeze. The child continued to make very satisfactory progress. The relatives were examined radiologically, and the mother was found to have a tuberculous lesion.

Dr. O'Reilly said that an interesting feature of the case was the unusual method of presentation. The child was apparently well, and then rapidly developed symptoms of tracheal obstruction. It was not uncommon for children with bronchial involvement by tuberculous hilar glands to present with a history of wheeze and cough. In an experience of approximately 90 such patients, the obstruction had occurred in the major bronchi, and often there was some distortion of the *carina major* by a bifurcation gland, but a child with tracheal involvement had not been met with. Secondly, the X-ray features were unusual. In primary pulmonary tuberculosis with bronchial involvement by hilar glands, it was usual to find the hilar shadows enlarged, with either obstructive emphysema or pulmonary collapse and accentuated lung markings. It was interesting that none of those features were present in X-ray films of the child under discussion.

Regarding the management of the case, Dr. O'Reilly said that the child so far had made very satisfactory progress. There were no post-operative complications, and, in fact, the child's tracheal obstruction was relieved to the extent of abolishing symptoms. Whether that would have been the course of the illness if operation had not been performed was difficult to know, but judged by previous cases such rapid improvement was uncommon.

If the diagnosis had not been missed originally, the form of therapy used probably would not have been carried out at the particular time it was, but it might have been necessary later. The usual method of treatment was to remove obstruction bronchoscopically if that was possible, and treatment with specific drugs was given in some cases. Thoracotomy as a life-saving measure had never been necessary in their experience.

The surgical treatment of the primary pulmonary complex was not new. Dillwyn Thomas in 1952 reported on 37 children in whom removal of tuberculous lymph glands with or without lobectomy had been carried out successfully, with one death. The indications for operation were stridor with cyanotic attacks, progressive enlargement of mediastinal glands in spite of conservative treatment, gross distortion of the bronchial tree and bronchiectasis, obstructive emphysema, and lack of resolution or progression of the pulmonary shadow in spite of conservative treatment, particularly when tubercle bacilli were found in the gastric contents.

Dr. O'Reilly said that he had not been able to find a follow-up report of the patients treated surgically by Thomas. The results of treatment of the children studied at the Royal Children's Hospital, Melbourne, showed that approximately 85% developed bronchiectasis and/or bronchostenosis when tuberculous hilar glands involved the bronchial tree. Bronchiectasis occurred much more commonly than bronchostenosis, but the latter was present in 10% to 15% of cases. However, the residual lesions had caused no symptoms during follow-up periods of from three to eight years.

It was possible that the child in the present case would have some residual scarring in the trachea, but the extent of that could not be assessed at present.

To summarize, Dr. O'Reilly said that the case history was that of a child of three and a half years with primary pulmonary tuberculosis, who presented with the rather unusual symptom of tracheal obstruction of short duration. The diagnosis was missed through failure to carry out a Mantoux test. Thoracotomy and aspiration of tuberculous caseous material from the hilar glands relieved the obstruction, and the child was making satisfactory progress.

Dr. R. HOWARD discussed briefly the operative procedure carried out. He said that he was not familiar with the type



of case concerned in a patient on the operating table, but knew that it was said that any lesion in the lung might be tuberculous however unlikely it looked. At operation in the present case, a lesion was found which appeared to be infiltrating the upper part of the mediastinum and the upper lobe of the right lung, with a small lesion in the apex of the lower lobe of the right lung. He thought that it might be malignant and inoperable, and could not separate lung from the lesion without chopping into the solid tissue. He cut out a piece for section and opened into a cavity. That contained material looking rather like caseous matter but not perfectly typical. The lesion was communicating with the bronchial tree. He then excised a small area in the apex of the lower lobe of the right lung. In retrospect he thought that the child had had reasonable but inadequate treatment. If it had been operated on by Thomas a larger opening into the cavity would have been made and all the tuberculous material curetted away. He would then have closed over the opening in the trachea in some way. Thomas's treatment was radical, but the results were said to be good. It was also said that after his treatment bronchial stenosis and bronchiectasis were less likely to occur.

Although it seemed that in childhood bronchiectatic lobes following tuberculosis remained dry, Dr. Howard wondered whether the patients concerned would develop subsequent troubles in those lobes in later adult life. Probably there was a place for surgical treatment in some of those cases, when as much tuberculous tissue as possible should be removed, and the hole in the bronchus cobbled over, the lung being inflated quickly to prevent the development of a tuberculous empyema.

Being a realist, and usually endowed with a sardonic sense of humour, he sets out to deceive the psychiatrist by throwing out psychological red herrings, to be analysed and traced back to childhood episodes. Nearly all psychological studies of alcoholics are based on these red herrings, and are a source of great amusement to them, as are the text-book descriptions of themselves. The studies reveal everything but the real truth.

In reality the true alcoholic has a definite and distinct mental and physical make-up, which can be diagnosed accurately very early in his drinking career, or even before he has had his first drink. Many of them are now being treated as obsessional or anxiety states; others as true schizophrenics. Indeed, a knowledge of alcoholism would save many of these patients prolonged courses of treatment by psychoanalysis, the various forms of shock treatment and even leucotomy. They have a definite disease which cannot be cured by such methods.

Much can be done for alcoholics. Hundreds in Sydney alone have been sober for five years and more. But such results can be obtained only by a knowledge of alcoholics; by treating them as human beings and not as moral lepers, and by giving them the hope that they are not hopeless. If then we are to educate the public on alcoholism, let it be on medical lines; and let the moral issues be for the theologians and not for psychiatrists, whose knowledge of theology is too limited.

Yours, etc.,

S. J. MINOGUE.

195 Macquarie Street,  
Sydney,  
April 11, 1956.

## HEALTH CENTRES.

SIR: Your editorial on health centres (M. J. AUSTRALIA, March 31, 1956) reminded me of visits I made to health centres in Great Britain almost two years ago.

Health centres were being developed at Harlow, in Essex, and others had recently been established at Manchester and at Edinburgh. However, the pioneer health centre is at Woodberry Down, in London, and this had been functioning for almost two years at the time of my visit. Woodberry Down Centre is a Mecca for overseas visitors, yet I must confess to a feeling of disappointment as I left the building, and I know that this has been shared by others who went there hoping to see a happy marriage between the preventive and curative branches of our profession. The two services were living and working under the same roof, but the union that the founders had hoped for had not yet occurred. Perhaps in time the present association will become a true partnership.

However, Woodberry Down started with certain disadvantages. In the first place, the doctors who practise at the centre were already established in adjacent suburbs. Although the accommodation provided by the London County Council at the centre was excellent, and included nursing, typing and telephone services, all of the doctors joining the centre continued to practise at their homes. The reasons advanced were that many patients still called on the doctor at home and that certain income tax deductions could legitimately be claimed only if practice continued at the doctor's residence.

Thus only a portion of the patients visited the centre, and the doctors themselves did not avail themselves fully of the facilities for consultation with the preventive services established in the building. For instance, there had been very few referrals to the baby clinics, to the staff of social workers, or to the excellent psychiatric and child guidance clinics. On inquiry, the service most frequently requested was the typing service. The theatre for minor operations and the clinical laboratory had never been used, because patients were usually referred to nearby hospitals if consultation or laboratory tests were required.

If a person such as the late John Ryle had directed the health centre I am sure that it would have succeeded brilliantly, for he could have brought the preventive and curative services together and produced the team work and the team spirit needed to obtain the best results. Health centres are likely to succeed only in newly developed areas and only if directed by someone with the understanding and enthusiasm necessary to secure cooperation from all of the services that operate from the centre.

The concept of the health centre as a place where a complete medical service can be obtained is a worthy and a noble one, and should be given every encouragement.

## Out of the Past.

*In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.*

DAVID COLLINS TO D'ARCY WENTWORTH.<sup>1</sup>

Sydney,  
21 March, 1791.

Sir,

I am desired by His Excellency to acquaint you in answer to your letter to me of the 10th ultimo that he is perfectly satisfied with the reports made to him of your conduct at Norfolk Island by Captain Hunter and Mr Jameson and that he will determine as to your future Residence of Employment as soon as he hears from England His Excellency expecting then to receive some Instructions respecting you.

I am, Sir,

Your humble servant,

DAVID COLLINS.

## Correspondence.

### ALCOHOLISM—A COMMUNITY RESPONSIBILITY.

SIR: Dr. Cade has made the common mistake of looking at the bottle, and not at the man. Many persons drink because they are worried or have psychiatric illnesses. In these cases the alcohol is a symptom, and not a cause. This point is emphasized in Dr. R. Stewart Kennedy's letter.

Wide clinical experience makes us realize that the true alcoholic is a person *sui generis*. He is an individualist, with his own method of thinking, a strange mixture of stark realism and "living in the clouds". To understand him, one must learn to think as he does. Because psychiatrists do not realize this, they have failed to gain his confidence, and regard his treatment pessimistically. They do not understand him, and speak down to him in platitudes, not as doctors, but as moralists. This he rightly regards as an insult to his intelligence, which may be of a very fine order.

<sup>1</sup> From the original in the Mitchell Library, Sydney.

The achievements of what might be termed technological medicine have dazzled and misled the public and some of the profession. In this setting, a patient is ideally an uncomplaining person lying in a hospital bed, and the full resources of clinical medicine and its ancillary sciences are brought to bear on the diagnosis and treatment of his disability. The success of this method has created beliefs that medicine can only be practised fully in a modern hospital, and that a patient cannot be treated properly unless he is processed in one of these factories during the course of his illness. It has created a brisk demand for specialization by new graduates and an insatiable demand for hospital beds by the public.

Both as a doctor and as a patient I have experienced the benefits and horrors of hospital medicine. I do not wish to belittle its advantages; but many doctors will agree with me that disease is a dynamic process, and its natural history cannot be properly studied or evaluated by diagnosis and treatment of the immediate phase that brings a patient into hospital. Here he is divorced from the environment which may have given rise to his condition, and which may continue to influence it when he is discharged. The personality of the patient and the conditions under which he lives and works tend to be given insufficient emphasis. Disease can rarely be prevented by admitting patients to hospital, and good health (which means not merely the absence of disease or infirmity but a positive feeling of social, physical and mental well-being) can never be achieved by hospital practice. Medicine today cannot justify its traditions if it neglects the study of the patient in his environment and if it ignores the social diseases (such as delinquency, crime, alcoholism and domestic discord) which cause so much ill-health and misery amongst the people whom we serve.

The practising doctor who knows the social conditions of his patients is in a key position, and, given the help of the social and preventive services that now are (or should be) available, he can promote good health and prevent disability to a degree not visualized a century ago. This help can be given to him in a modern health centre, where the preventive and curative services work as a team.

These are some of the reasons why health centres should be encouraged. I hope that money will be forthcoming from some source to establish a pilot study health centre under suitable conditions in Australia. Its advantages could then be demonstrated to the nation.

Yours, etc.,

D. W. JOHNSON,  
Deputy Director-General of Health  
and Medical Services, Queensland.

Brisbane,  
April 11, 1956.

#### AN APOLOGY.

SIR: In the 1955 Year Book of the *Ligue internationale contre le rhumatisme* there are listed the names of thirty Melbourne doctors under the heading "Melbourne Rheumatism Society", with mine at the head.

Since there is no such body, my friends have been asking me how their names could have been published. I confess that I foolishly allowed the editor of the *Ligue internationale* to believe that such a society existed, when my intention was merely to send the names of doctors who have distinguished themselves or are interested in rheumatism, in order that they should receive important notices about international happenings in rheumatism.

I have notified the editor of my stupidity, and I express regret to any who have been caused inconvenience.

Yours, etc.,

M. KELLY.

34 Queens Road,  
Melbourne, S.C.2,  
April 20, 1956.

#### THE MENTAL HOSPITAL.

SIR: I have read with interest your review of "The Mental Hospital" (March 3, 1956, page 368), but I regret that I cannot agree with much of what your reviewer has written. He (or she) states that the book will be read with amusement and still more amazement. The review suggests that he has not read the book very well. The review states: "The authors found the system of reporting clumsy and

inefficient." The book states (page 220): "There were almost no absolute mistakes in reporting: information was added relatively infrequently as a nurse passed on a report and we found no added information which was in conflict with a previous report. . . . Almost all distortion that occurred resulted from omission and it is obvious, under the circumstances, that much abbreviation of previous reports was unavoidable."

Referring to the problem of the special case and a lengthy conference record between one psychiatrist (not psychiatrists, as the reviewer states) and ward staff your review then states: "The problem remained unsolved." On page 308 it states: "While it (the conference) failed to resolve it (the problem), a definite plan was made for Mrs. B. and Mr. H. to talk together with the patient. . . . The next night the planned discussion occurred, the patient was much less tense and the day following, after her psychotherapeutic hour, the patient returned to the ward dramatically changed."

In the next sentence but one there is a statement in the review: "There was frequent conflict between the nurses over the special feeding. . . ." On page 312 the wording is: "There was much objection among the personnel and among some of the patients about Mrs. T. receiving special attention. . . ." There is perhaps a difference between the nurses objecting to something and conflict between nurses.

Then the review refers to a special study of incontinence, in which the authors (according to the review) "conclude that the patient who feels neglected. . . ." On page 377 there are the sentences: "We were not able to continue our study long enough to identify the function (of incontinence) as demonstrably as in the case of excitement. Nevertheless, other relevant factors should be mentioned, since they probably contain hints of the direction in which to look for the more concrete and definite answers." One of these (other relevant factors which probably contain hints) is what your reviewer has erroneously stated as the authors' conclusion.

In the last paragraph the reviewer refers to "the closing paragraph" suggesting the final conclusion and summary. In actual fact the remark (they refer to) does occur on the last page of text (page 484), but it is in fact the last paragraph of Appendix H. The actual summary is on pages 403-408. Your reviewer states, referring to the "closing paragraph", that the authors stress the need for inquiring into the best type of institution. He then states: "They have at least described another kind." I find the implication of this opinion difficult to accept. The actual results are given in fifteen tables in Appendix E and show recovery and relieved rates for schizophrenia round about 60%. In actual fact the Chestnut Lodge Sanitarium enjoys an international reputation, and the list of 58 publications in Appendix D illustrates that it differs from some of the institutions recently mentioned in the Stoller report.

The fact that such an institution should conduct a research on itself, wash its dirty clothes in public, is noteworthy and indicates that there is a need for more widespread use of a critical appraisal of current practices. Then many hoary clichés become obviously ridiculous, and wider vistas are opened for imaginative planning of hospital care than a generation could exhaust.

Yours, etc.,

Ballarat Mental Hospital,  
Ballarat,  
Victoria.  
March 14, 1956.

J. S. B. LINDSAY.

#### CHEMOTHERAPY OF PULMONARY TUBERCULOSIS IN PATIENTS AT HOME AND AT WORK.

SIR: The article by Dr. Campbell and Dr. O'Brien on "Chemotherapy of Pulmonary Tuberculosis in Patients at Home and at Work" (M. J. AUSTRALIA, April 14) calls for some comment. It purports to be an assessment of the results of treatment after excluding to a large degree the factor of bed rest. This is an important subject at a time when adequate chemotherapy allows the physician and patient rather more latitude than in the past, and when many are wondering just how much bed rest is necessary. Might I offer the following criticisms on the writers' results?

1. The "relapse" group—that group in which one period of treatment (in 41 cases out of 75 with chemotherapy) has failed to achieve lasting stability—is a far from ideal one in which to attempt to estimate the influence of another



new factor. This group *per se* is a "headache" group. Good results are harder to achieve, and they are surely entitled to the best therapy that orthodox methods can offer them. Drug sensitivity testing is vital before commencing a definitive programme of treatment on a "relapse" patient who has been given or who is still receiving chemotherapy. If these patients are not to be allowed to drift along over months and years acquiring bacterial resistance to one chemotherapeutic drug after another. The authors admit that they have made no attempt to scratch the surface of this problem, though their own tables show that it played a major part in their results.

2. Dr. Campbell and Dr. O'Brien state that they used "rather stringent criteria" before classifying a case as satisfactory. Surely, sir, the requirements of cavity closure, sputum conversion, and absence of spread of disease are the very minimum requirements for satisfactory progress after six to eight months of chemotherapy. (The admission to hospital factor only accounted for one unsatisfactory result.) Granted that some of their patients were beyond surgical help by virtue of age or extent of disease, one would have thought that some at least of their cases with persistent cavitation or a persistently "positive" sputum (and who were, note, "relapse" cases) should have been treated by resection or thoracoplasty before the end of six to eight months. Persistence with what proved to be inadequate medical treatment for this period must surely have been to the ultimate detriment of at least some of these patients. Or perhaps patients who are not made to rest, or even in some cases to give up work, will not regard their disease as sufficiently serious to merit a major though essential operation.

3. Surely, sir, the overall results obtained by the writers, though no doubt good by pre-war standards, are poor when judged by present ones. They bemoan the fact that they had no control group for comparison, but surely any of the large groups of figures from many parts of the world would have served as a baseline—they should have achieved much better results in their highly selected group. But, of course, their results do not stand comparison with large groups treated along orthodox lines: (i) At the end of six to eight months, 35% of 52 patients still had a "positive" sputum (and a "positive" gastric lavage or laryngeal swab still means a "positive" sputum). Hoyle *et alii* (1955), in what seems to have been a worse group of patients, had only 16% of 111 patients with a "positive" sputum after the same period, and the Medical Research Council of Great Britain (1955) had none out of 47 patients treated with "isoniazid" and para-aminosalicylic acid with a "positive" sputum after six months. Both these groups had bed rest in addition to chemotherapy. The results are in each case statistically better than the Victorian figures. (ii) They achieved cavity closure in only 10 out of 38 cases (26%) at six to eight months. These figures compare badly with Hoyle *et alii*'s results of at least 43 cavities closed out of 79 cases in which the time of cavity closure was determined (54%; again statistically better). The Brompton group's results are superior for cavities both more or less than 2.5 centimetres in diameter. Again the results in 50% of Dr. Campbell and Dr. O'Brien's group of recent cavitation were unsatisfactory, yet they suggest that this group merits further study. (iii) Spread of disease occurred in five out of 72 (7%) patients in the first six months on chemotherapy. These figures alone hold out poor hope of an eventual low relapse rate. (iv) Even in 34 closed (non-cavitated) cases there were six failures (18%), and in 10 "one zone, no cavitation", that is, minimal cases, two were making unsatisfactory progress at six months. (v) Nineteen patients were treated while continuing work, and they regard their results as "surprisingly good", in that only five had unsatisfactory results at six to eight months. They regard continuing at work as contributing to failure in only one case. Are they sure that continued work did not cause two out of four cavities to remain open? Do they not agree that the patient who took an inadequate dose of para-aminosalicylic acid might have learnt the dose better by precept had he been in hospital at least at the beginning of his treatment?

Dr. Campbell and Dr. O'Brien's results, sir, are interesting, even if they do not establish any case at all for ambulant chemotherapy in pulmonary tuberculosis. The day of such treatment may come, but the writers' work has done nothing to hasten it. They would seem to underline what we indeed already know: that cases of pulmonary tuberculosis which relapse are a difficult and increasing problem and must be treated adequately at bed rest with a knowledge of the antibiotic sensitivity of the patient's organisms; and that such a group of patients is not one to "play with" in terms of management. Acceptance of pre-war standards in terms

of sputum conversion and cavity closure is not good enough. We have at last reached a stage in this country, sir, with generous social service allowances, freely available beds in first-class sanatoria and chest hospitals, adequate bacteriological facilities and skilled surgical technique, when it has become possible at least to plan a complete programme for the "cure" of disease in the majority of patients at the first attempt. It would seem a pity, sir, if before we even achieve that ideal in any one centre, we should try to improve on it in others.

Yours, etc.,

767 Old South Head Road,  
Vaucluse,  
New South Wales.  
April 15, 1956.

JOHN READ.

#### References.

- HOYLE, C., NICHOLSON, H., and DAWSON, J. (1955), "Prolonged Chemotherapy in Pulmonary Tuberculosis", *Lancet*, 2: 1310.  
MEDICAL RESEARCH COUNCIL (1955), Seventh Report by Tuberculosis Chemotherapy Trials Committee, "Various Combinations of Isoniazid with Streptomycin or P.A.S. in the Treatment of Pulmonary Tuberculosis", *Brit. M. J.*, 1: 435.

#### MIDDLE LOBE SYNDROME.

SIR: In his admirable account of the middle lobe syndrome in the journal of March 18, Dr. Maurice Joseph makes one statement which I believe is incorrect. He implies that because of the rarity of carcinoma of the middle lobe, atelectasis of this lobe can be confidently considered as due to non-malignant causes. In my experience carcinoma of this lobe is relatively as frequent as it is anywhere else in the lung, and its comparative rarity depends on the small size of the lobe and its bronchus. We have operated on a number of patients with carcinoma of this lobe, and although middle lobe syndrome is the usual explanation of a collapsed middle lobe, the possibility of carcinoma should always be kept in mind, and its presence excluded before a diagnosis of middle lobe syndrome is made.

Yours, etc.,

12 Collins Street,  
Melbourne,  
April 10, 1956.

C. J. OFFICER BROWN.

#### CHILDHOOD SCHIZOPHRENIA.

SIR: Dr. Minogue's criticism (M. J. AUSTRALIA, March 17, 1956) of Dr. J. F. Williams's description of schizophrenia in childhood is unfair and unreasonable. Schizophrenia in childhood is a definite disease, it does not exist in the eye of the beholder, but rests on definite mental and physical signs and symptoms. It is true that many bodily diseases may make a child solitary and devoid of emotion, but to confuse such diseases with schizophrenia is simply a mistake in diagnosis, and it is the business of a psychiatrist to differentiate these conditions.

Dr. Minogue states that Dr. Williams's cases of acute schizophrenia in childhood are examples of delirium. It is rare for a case of early schizophrenia to be mistaken for a case of delirium.

Yours, etc.,

Melbourne,  
March 30, 1956.

JOHN K. ADY, F.R.A.C.P.

#### THE ARTHRITIC DISEASES AND THEIR TREATMENT.

SIR: After reading Dr. Nelson's excellent excursion over the broad field of the arthritic diseases (M. J. AUSTRALIA, March 31, 1956) I know he could have given more detail of the treatment had time allowed him, and so I venture to add additional experiences.

Firstly, and most urgently, I want to express the opinion that "Butazolidin" and cortisone-like steroids should not be given together for fear of producing hemorrhage from silent peptic ulceration. In several cases in Melbourne there have been sudden bleedings, and this, in retrospect,

is to be expected, since either "Butazolidin" or cortisone (especially the  $\delta$  forms) can cause or aggravate ulcers, and the steroid may mask the warnings of complications for which one usually looks. When giving aspirin with either "Butazolidin" or cortisone I prefer to use the buffered tablet, having in mind that the care of the stomach in arthritis is now becoming as important as the care of the joints.

Secondly, I consider "Butazolidin" should be given cautiously after gold, as thrombocytopenia or arteriolar necrosis has accompanied administration of either drug. My own practice now is to wait three months after stopping gold before giving "Butazolidin", and to wait three weeks after "Butazolidin" before commencing gold. Suppression of hemopoiesis has occurred so rapidly after initial administration of "Butazolidin" that only daily blood counts could have given warning, and a false sense of security may be given by relying on counts at regular longer intervals.

Thirdly, in using deep X-ray therapy in spondylitis I am coming round to the views expressed in Scandinavia, that it should be given only to painful areas, and not routinely to the whole spine. These patients often forget having had deep X-ray therapy, or else confuse it with short-wave diathermy, and possibly one solution to this aspect would be to tattoo inconspicuously on their backs the dosage given. Leucemia is common enough in the medical wards already, without adding another possible causal factor to those which the bone marrow may meet now, or in the future, in everyday life.

Finally, the increased anti-rheumatic and decreased mineral effects of the  $\delta$  compounds still does not render them the ideal steroid to combat the various emergencies which arise in long-term therapy of chronic disease; and one must be prepared, in dealing with these cases of iatrogenic adrenal atrophy, to revert quickly to ACTH, hydrocortisone and aqueous adrenal extract, given intravenously.

I hope that I do not sound too cautious, but many of the consequences of therapy have proved irreversible, with fatal results.

Yours, etc.,

R. F. A. STRANG.

105 Collins Street,  
Melbourne,  
April 18, 1956.

#### DOCTORS' SUPERANNUATION FUND.

SIR: The Superannuation Fund for Doctors is just completing its second successful year in Newcastle. Contributions of up to £200 per annum can be made to the Fund, and these contributions are an allowable deduction in income tax returns along with life assurance premiums up to that amount. The Fund is administered by a Board of Trustees consisting of the three undersigned doctors, and earnings of the Fund are credited to each member's account according to the amount contributed by him on June 30 in each year.

Membership in the Fund requires no medical examination, and the Fund is open and welcomes unassurable practitioners. Inquiries would be welcomed by any of the Trustees named below, or by the Secretary-Manager of the Fund, F. S. Scorer, T. and G. Building, Hunter Street, Newcastle.

Yours, etc.,

A. J. OSTINGA, O. J. ELLIS and  
R. LINDSAY, Trustees.

Newcastle,  
New South Wales,  
April 7, 1956.

#### PROBLEMS OF MALARIA IN NEW GUINEA.

SIR: I have read Dr. Carl Gunther's article ("Problems of Malaria in New Guinea", M. J. AUSTRALIA, March 24, 1956) with great interest. With due respect to his long and wide experience in the Territory, I feel that he has not dealt adequately with the problem of malaria of low endemicity as occurs in the Highlands. This is an important problem, as Highland areas are a large part of the Territory, contain large native populations, and are likely to undergo significant economic development in the near future.

I cannot agree that a statement can be made about speed of invasion of non-endemic areas in the Highlands, as observations have not been carried out for sufficient time. From my own observations I will state that epidemics of

malaria can and do occur in the Highlands, and further that they can masquerade as epidemics of influenza, dysentery and even whooping-cough, these diseases being secondarily imposed on the underlying malarial epidemic. The evidence so far points to a change from a mild and localized endemicity to a generalized epidemic, in certain areas, when seasonal conditions favour extensive instead of focal mosquito breeding.

I would suggest that in such areas of mild endemicity the group tolerance is low and seldom develops to any useful extent. Snap surveys in these areas could be very misleading unless the possibility of recent epidemics or a long interepidemic period is kept in mind. The real truth may emerge only after observation over a long period, and Highland areas may well prove to be a special problem in the pattern of overall control of malaria in the Territory.

The achieving of tolerance to malaria is, as Dr. Gunther has pointed out, a long and painful process both for the individual and for the community. The individual's acquiring of tolerance depends in part on the frequency of infection of fresh sporozoites into his blood-stream. Where he is exposed to very frequent inoculations, he is likely to acquire a high protective degree of tolerance, if he survives. Where he is exposed only to infrequent spasmodic inoculations, he is likely to acquire a lesser degree of tolerance, or none at all. In areas of low endemicity, some individuals acquire a useful degree of tolerance to their malaria, while in the majority it is of no practical importance. Adult males seldom die, but are frequently incapacitated by their attacks, and they are also proven gametocyte carriers. Adult women suffer more, with constant debilitation, miscarriages and even deaths during pregnancy, labour and lactation. These low endemic areas can be subject to flaring epidemics involving the whole population, with many deaths, especially among women and children, either from the disease or its indirect effects—and I would reiterate here that these epidemics probably masquerade in many forms, with the underlying cause at least partly concealed.

Under these conditions, for all practical purposes, the community is non-tolerant, although malaria is endemic in the region. I believe that these conditions occur far more widely in the Highland areas of New Guinea than is usually recognized.

The practical application lies in the problems created by the opening of these Highland areas for European settlement, at the present time particularly for coffee-growing. The labourers employed are usually local natives, who are frequently incapacitated by their malarial attacks, and many of whom become gametocyte carriers. This native labour is being concentrated in villages, often set up on land extremely suited to extensive vector breeding, in areas which the natives themselves know as dangerous ground. The setting up of missions and mission schools creates the same problem of increasing the number of foci from which a general epidemic can arise. Such village units are not a constant feature of native existence in the Highlands; in a number of places family hamlets are scattered over large areas, and villages are built only during infrequent festivals. Malaria here may well be disseminated as much by movement of the human carrier as by movement of the infected mosquito.

We have here an unstable type of malarial situation susceptible to alteration by any one of a number of factors, or by a combination of them. At least two new factors in the epidemiological picture are introduced by the employment of large numbers of local natives. Firstly, they are brought together in settlements under—for them—unusual conditions, and subjected to unusual malarial risk. Secondly, in being relieved of their normal social responsibilities by the fact of their employment, they are left free to range in numbers far and wide during their leave periods, to acquire fresh infections or to infect fresh mosquitoes. In the large and scattered native populations of the Highlands, the labour-line, the mission school and other settlements can create a new menace to the community.

It is generally admitted that the two useful measures of control under the circumstances are residual spraying of houses and suppression by drugs. Dwellings of labour-lines can be efficiently sprayed. This will help to prevent transmission of malaria within the labour-line, but it will not prevent the labourers receiving further inoculation on any week-end leave. Residual spraying of all the scattered hamlets of the natives is a total impossibility at present.

I believe use of suppressive drugs in full doses is fully justified for Highland natives when employed or concentrated in groups on country which exposes them to increased inoculation. Each new concentration of population adds



to the risk of creating epidemic foci in these areas already subject to generalized epidemics. As these settlements may be established in interepidemic periods, a false sense of security can be built up.

Highland native employees employed in the Highlands who have been on suppressive drugs, when their employment is terminated, often report smart attacks of malaria. This is generally attributed to loss of tolerance due to the drug suppression during the period of employment; but is this loss of tolerance under drug suppression any greater than the dwindling tolerance of the interepidemic period? And are the attacks at the end of his employment any worse than those he previously suffered from? We do not know if he reports his attack because of its unusual severity or because he has been educated to seek treatment promptly, and now knows his attack can be quickly terminated. We have no evidence to suggest that the attacks developing after suppression are any more severe than attacks suffered after an interepidemic period equal to the period of suppression. The individual labourer, at the end of his employment, is well fed and in good physical condition to withstand any attack which may occur either as a recrudescence of suppressed infection or as a result of fresh inoculation after he returns home.

In my view, therefore, full drug suppression in Highland areas known to be endemic for malaria, for any unusual concentration of population such as at mission-schools and in labour-lines, is most desirable, and can do little harm to the tolerance that exists. If this is combined with an efficient medical service and prompt treatment of attacks with one of the persistent antimalarials, it will go a long way towards ultimate control of malaria in the Highlands, and can be put into action far more readily than a residual spraying campaign in these areas.

Yours, etc.,

T. E. T. SPENCER,  
Medical Officer in the Department  
of Public Health, Territory of  
Papua-New Guinea (on leave).

Moorabinda,  
Tenterfield,  
New South Wales.  
April 16, 1956.

## Post-Graduate Work.

### THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

#### Course in Cardiology.

The fourth annual post-graduate course in cardiology, conducted by the Hallstrom Institute of Cardiology, in collaboration with the Post-Graduate Committee in Medicine, will be held in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital, from May 21 to 25, 1956. This year the subjects chosen for discussion will be mainly relating to recent advances in the treatment of acquired and congenital heart disease. The course will consist of a series of afternoon lectures with demonstrations of patients by the staff of the Institute, and members of various University departments. The programme is as follows:

Monday, May 21: "Hypertension." 2.15 p.m., "Pharmacology of Recent Hypotensive Drugs", Dr. E. A. Johnson; 3.15 p.m., "The Dunedin Plan", Dr. J. K. Maddox; 4.15 p.m., "The Psychosomatic Aspects of Hypertension", Dr. D. Ross.

Tuesday, May 22: "Congenital Heart Disease." 2.15 p.m., "Pulmonary Hypertension and Congenital Heart Disease", Dr. K. Cotton; 3.15 p.m., "Surgical Repair of Septal Defects", Dr. F. Mills; 4.15 p.m., case presentations, Dr. B. R. Huxtable and Dr. P. Harvey.

Wednesday, May 23: "Ischaemic Heart Disease." 2.15 p.m., "Lipoproteins and Atherosclerosis", Professor F. R. Magarey and Dr. F. C. Courtice; 3.15 p.m., "Cardiac Pain and its Medical and Surgical Management", Dr. A. Seldon; 4.15 p.m., "Ambulant Anticoagulant Therapy", Dr. E. Halliday.

Thursday, May 24: "Rheumatic Heart Disease." 2.15 p.m., "Acute Rheumatic Carditis: Hormones versus Salicylates", Dr. J. K. Maddox; 3.15 p.m., "Mitral Stenosis: Selection of Cases for Operation", Dr. J. Halliday; 4.15 p.m., case presentation, Dr. B. R. Huxtable and Dr. P. Harvey.

Friday, May 25: "Congestive Cardiac Failure." 2.15 p.m., "Management of Hypertensive Cardiac Disease in Practice", Dr. R. L. Harris; 3 p.m., "Newer Concepts of Congestive

Cardiac Failure", Dr. B. C. Sinclair-Smith. 4.15 p.m., "Management of Cardiac Failure in Practice", Dr. J. Radford.

The course is free to members of the staff of the Royal Prince Alfred Hospital. Other participants must register with the Course Secretary, The Post-Graduate Committee in Medicine. Fees for attendance will be £6 6s.

#### Week-End Course in Diabetes Mellitus.

The Post-Graduate Committee in Medicine announces that a week-end course on the subject of *diabetes mellitus* will be held in the Students' Lecture Room, The Royal North Shore Hospital, on Saturday and Sunday, May 26 and 27, as follows:

Saturday, May 26: 10.30 a.m., Introduction; 10.45 a.m., "Diagnosis", Dr. Keith Harrison; 11.15 a.m., "General Principles of Modern Management", Dr. Hales Wilson; 11.45 a.m., "Diet", Dr. James Isbister and Miss Lorna Stevens; 2 p.m., "Insulin", Dr. Keith Harrison; 2.30 p.m., "Newer Insulins", Dr. R. D. Puffett; 3 p.m., "Present Position of Oral Insulin Substitutes", Dr. W. Wilson Ingram; 4 p.m., "Hypoglycaemia", Dr. Hales Wilson.

Sunday, May 27: 10.30 a.m., "Diabetes and Pregnancy", Dr. Stuart Studdy, Dr. Hales Wilson and Dr. Clair Isbister; 11.15 a.m., "Intercurrent Disease: Acute, Chronic and Surgical", Dr. James Isbister; 11.45 a.m., "Diabetic Children", Dr. S. E. J. Robertson and Miss K. Ogilvie; 2 p.m., "Ketosis", Dr. W. Wilson Ingram; 2.30 p.m., "Ocular Complications of Diabetes", Dr. Keith Armstrong; 3 p.m., "Neuropathy and Peripheral Vascular Disease", Dr. R. D. Puffett; 4 p.m., "Peripheral Vascular Disease: Surgical Aspects", Dr. C. H. Wickham Lawes; 4.30 p.m., conclusion.

Fees for attendance at this course will be £4 4s.

#### Course in Clinical Laboratory Methods.

A course in clinical laboratory methods, specially designed for general practitioners, will be conducted by the staff of the Kanematsu Memorial Institute of Pathology at Sydney Hospital under the supervision of the director, Dr. F. C. Courtice, from June 18 to 22, 1956. The programme will occupy five days, Monday to Friday, inclusive, from 11 a.m. to 1 p.m., and from 2 p.m. to 4 p.m. The course will be limited to ten members only, and early application is essential. The minimum number of entrants is four.

For the most part the course will take the form of tests and determinations which general practitioners could do themselves if necessary. In addition, demonstrations of more difficult tests and estimations will be given. The programme will include the following:

Hematology: (i) Basic hematological techniques—for example, methods of collection, staining and counting cells, estimation of haemoglobin, haematocrit, blood sedimentation rate, bleeding and coagulation time. (ii) Pathogenesis of anaemia and laboratory investigations of anaemia. (iii) Blood grouping and cross-matching technique; laboratory control of anticoagulant therapy.

Bacteriology: (i) Basic bacteriological techniques which may be of use in general practice; interpretation of bacteriological reports. (ii) Microscopic examination of urinary deposits. (iii) Antibiotic sensitivity; sterilization procedures.

Biochemistry: (i) Gastric function: total, free and abnormal acid; histamine; tubeless analysis; occult blood. (ii) Hepatic function: bilirubin, turbidity tests, phosphatase, serum proteins, electrophoresis, other tests. (iii) Pancreatic function: carbohydrate tolerance, amylase production. (iv) Renal function: clearance tests, electrolyte balance, the flame photometer. (v) Faeces: fat content, detection of occult blood. (vi) Basal metabolism: methods, protein-bound iodine.

The fee for attendance at the above course is £7 7s.

#### Week-End Course in Electrocardiography.

The Post-Graduate Committee in Medicine announces that a week-end course in electrocardiography will be held in the Maitland Lecture Theatre, Sydney Hospital, on Saturday and Sunday, June 23 and 24, 1956, as follows:

Saturday, June 23: 10 a.m., introductory remarks, Dr. A. J. Hood Stobo (chairman); 10.15 a.m., "Theoretical Considerations", Dr. G. E. Bauer; 10.45 a.m., "Electrocardiographic Technique", Mr. J. Davis; 11.30 a.m., "Arrhythmias", Dr. F. L. Ritchie; 12.15 p.m., "Heart Blocks", Dr. M. F. Deck; 2.15 p.m., symposium on "Electrocardiography in Ischaemic Heart Disease", Dr. Ewan Corlette (chairman), Dr. A. E. McGuinness, Dr. F. L. Ritchie, Dr. J. Sevier and Dr. G. E. Bauer.

Sunday, June 24: 10 a.m., "Electrocardiogram of Hypertensive and Vascular Heart Disease", Dr. J. Raftos; 10.45 a.m., "Electrocardiogram in Electrolyte Disturbances and Other Rarer Conditions", Dr. G. E. Bauer; 11.45 a.m., "Value and Limitations of Modern Electrocardiography", Dr. Wilfred Evans; 12.15 p.m., general discussion.

Fees for attendance at the above course will be £3 3s.

#### Enrolments.

Candidates wishing to attend any of the above courses are asked to make written application, enclosing remittance, to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

## Australian Medical Board Proceedings.

### NEW SOUTH WALES.

THE following additions and amendments have been made to the Register of Medical Practitioners for New South Wales in accordance with the *Medical Practitioners Act*, 1938-1955:

Registered medical practitioners who have complied with the requirements of Section 17 (3) and are registered under Section 17 (1) (b) of the Act: Dodd, Claude William, M.B., Ch.B., 1949 (Univ. Pretoria); Martin, Kevin Dominic Francis, M.B., B.S., 1954 (Univ. London), M.R.C.S. (England), L.R.C.P. (London), 1955; Turner, Harold Montagu, M.R.C.S. (England), L.R.C.P. (London), 1953.

### TASMANIA.

THE following have been registered, pursuant to the provisions of the *Medical Act*, 1918, of Tasmania, as duly qualified medical practitioners: McCarthy, John Joseph,

M.B., B.S., 1947 (Univ. Melbourne); Gallaugh, William, M.B., Ch.B., B.A.O., 1925 (Univ. Dublin); Johnson, Thelma Dorothy, M.B., Ch.B., 1952 (Univ. Birmingham), M.R.C.S., L.R.C.P.

## Notice.

### BRITISH MEDICAL ASSOCIATION (NEW SOUTH WALES BRANCH).

#### Section of Neurology, Psychiatry and Neurosurgery.

A MEETING of the Section of Neurology, Psychiatry and Neurosurgery of the New South Wales Branch of the British Medical Association will be held at 8 p.m. on May 15, 1956, in the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney. Dr. S. Benedek, Dr. S. Morson and Dr. J. D. Russell will speak on "Current Trends Overseas in Psychiatry and Neurosurgery".

This meeting was erroneously notified in the monthly circular of the New South Wales Branch of the British Medical Association as a meeting of the Section of Urology.

## The College of Radiologists of Australasia.

### EXAMINATIONS FOR MEMBERSHIP.

THE following candidates were successful in the March examinations of The College of Radiologists of Australasia, Part II, for membership of the College. Radiodiagnosis: Dr. J. Kremer, Dr. J. K. Monk, Dr. A. D. Maclean, Dr. D. McK McNab and Dr. Joan Spong (Victoria), Dr. L. V. Perrett (South Australia). Radiotherapy: Dr. G. P. G. Sim (New Zealand).

### DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED APRIL 14, 1956.<sup>1</sup>

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism .. ..	1	6(4)	2(1)	1(1)	..	..	..	..	10
Amoebiasis .. ..	..	..	..	..	..	..	..	..	..
Ancylostomiasis .. ..	..	..	1(1)	..	..	..	..	..	1
Anthrax .. ..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	2	..	..	..	..	..	..	2
Brucellosis .. ..	..	..	..	..	..	..	..	..	..
Cholera .. ..	1	..	..	..	..	..	..	..	1
Chorea (St. Vitus) .. ..	..	..	..	..	..	..	..	..	..
Dengue .. ..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile) .. ..	10(5)	14(13)	5(5)	..	1(1)	..	..	..	30
Diphtheria .. ..	1(1)	1(1)	8(2)	..	..	..	..	..	10
Dysentery (Bacillary) .. ..	..	..	..	1(1)	2(1)	1(1)	..	..	4
Encephalitis .. ..	..	1	..	1	..	..	..	..	2
Filariasis .. ..	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice .. ..	..	..	..	..	..	..	..	..	..
Hydatid .. ..	..	..	..	..	..	1(1)	..	..	1
Infective Hepatitis .. ..	98(52)	98(47)	..	28(11)	9(7)	1	..	1	235
Lead Poisoning .. ..	..	..	..	..	..	..	..	..	..
Leprosy .. ..	..	..	..	..	7	..	..	..	7
Leptospirosis .. ..	1	..	6	..	..	..	..	..	7
Malaria .. ..	..	..	..	..	..	..	..	..	..
Meningococcal Infection .. ..	1	2(1)	..	..	..	1	..	..	4
Ophthalmia .. ..	..	..	..	..	1	..	..	..	1
Ornithosis .. ..	..	..	..	..	..	..	..	..	..
Paratyphoid .. ..	..	..	..	..	..	..	..	..	..
Plague .. ..	..	..	..	..	..	..	..	..	..
Pollomyelitis .. ..	12(5)	12(9)	11(6)	1(1)	7(2)	1	..	..	44
Puerperal Fever .. ..	..	..	..	..	..	..	..	..	..
Rubella .. ..	..	14(9)	..	1(1)	2(1)	..	..	..	17
Salmonella Infection .. ..	..	..	..	5(5)	1(1)	..	..	..	6
Scarlet Fever .. ..	22(4)	28(12)	4(2)	4(1)	1(1)	..	..	..	59
Smallpox .. ..	..	..	..	..	..	..	..	..	..
Tetanus .. ..	..	..	..	2(1)	..	..	..	..	2
Trachoma .. ..	..	..	..	..	9	..	..	..	3
Trichinosis .. ..	..	..	..	..	..	..	..	..	..
Tuberculosis .. ..	53(35)	22(15)	16(7)	7(5)	10(7)	7(3)	..	..	115
Typhoid Fever .. ..	1	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne) .. ..	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne) .. ..	..	..	..	..	..	..	..	..	..
Yellow Fever .. ..	..	..	..	..	..	..	..	..	..

<sup>1</sup>Figures in parentheses are those for the metropolitan area.



## Medical Prizes.

### PRIZE FOR PAPER ON RHEUMATISM AND ARTHRITIS.

THE Health and Tourist Board Office of Acqui, Piedmont, Italy, announces an international competition for a medical paper on the physiology, clinical aspects or treatment of rheumatism and arthritis. Papers must be original and unpublished. The competition is open to all medical practitioners. The prize will be one million Italian lire. The closing date for entries will be December 31, 1956. Further details may be obtained from the promoters.

## Congresses.

### WORLD CONGRESS ON FERTILITY AND STERILITY.

THE second World Congress on Fertility and Sterility will be held at Naples, Italy, from May 18 to 26, 1956. It is sponsored by the International Fertility Association. The chairman of the Congress is Dr. D. G. Tesauro, S. Andrea Delle Dame 19, Naples, Italy.

### INTERNATIONAL CONGRESS OF OTOLARYNGOLOGY.

THE sixth International Congress of Otolaryngology will take place at Washington, D.C., United States of America, from May 5 to 10, 1957. Three plenary sessions will be devoted to "Chronic Suppuration of the Temporal Bone", "Collagen Disorders of the Respiratory Tract" and "Papilloma of the Larynx". The General Secretary is Dr. Paul H. Hollinger and the administrative office is at 700 North Michigan Avenue, Chicago II, Illinois, United States of America.

## Medical Appointments.

The following appointments have been made to the honorary medical staff of the Royal Alexandra Hospital for Children, Sydney: honorary physician, Dr. D. G. Hamilton; honorary assistant physicians, Dr. D. Kerr Grant, Dr. R. H. Vines; honorary relieving assistant physicians, Dr. J. D. McDonald, Dr. J. C. J. Quoy; honorary assistant dermatologist, Dr. Jean Mason-Johnson; honorary relieving assistant dermatologist, Dr. L. J. Cairns; temporary honorary relieving assistant physician, Dr. A. Himmelhoch; honorary surgeon, Dr. M. Sofer Schreiber; honorary assistant surgeon, Dr. A. W. Middleton; honorary relieving assistant surgeons, Dr. A. C. Bowring, Dr. R. S. B. Hudson; temporary honorary relieving assistant surgeon, Dr. P. D. Blaxland; honorary ear, nose and throat surgeon, Dr. Patricia R. Davey; temporary honorary relieving assistant ear, nose and throat surgeon, Dr. R. E. Dunn; honorary assistant ophthalmic surgeon, Dr. D. L. Rich; visiting cardiologist, Dr. Douglas S. Stuckey.

Dr. M. R. Hone has been appointed surgical registrar at the Royal Adelaide Hospital, South Australia.

## Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Lane, Godfrey Joseph, M.B., B.S., 1932 (Univ. Melbourne), 235 Macquarie Street, Sydney.

## Deaths.

THE following deaths have been announced:

MORLET.—Jack Morlet, on April 13, 1956, at Ringwood, Victoria.

COPE.—Hubert Roger Cope, on April 14, 1956, at Toowoomba, Queensland.

GILFILLAN.—William Gilfillan, on April 15, 1956, at Adelaide.

LOVE.—Harold Russell Love, on April 17, 1956, at Toowong, Queensland.

DUNSTAN.—Ambrose Hedley Dunstan, on April 20, 1956, at Camberwell, Victoria.

## Diary for the Month.

MAY 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

MAY 11.—Tasmanian Branch, B.M.A.: Branch Council.

MAY 11.—Queensland Branch, B.M.A.: Council Meeting.

MAY 14.—Victorian Branch, B.M.A.: Finance Subcommittee.

MAY 15.—New South Wales Branch, B.M.A.: Medical Politics Committee.

MAY 16.—Western Australian Branch, B.M.A.: General Meeting.

MAY 17.—Victorian Branch, B.M.A.: Executive of Branch Council.

MAY 22.—New South Wales Branch, B.M.A.: Ethics Committee.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 8 King's Park, West Perth): Norseman Hospital; all contract practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

## Editorial Notices.

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